Antibiogo

# AST Merge

# User Guide

# VO2_Nov 2025

# Table of contents



# Abbreviations and definitions

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|---|---|
| **AST** | Antimicrobial susceptibility test |
| **WHONET** | Free Software developed by the WHO Collaborating Centre for Surveillance of Antimicrobial Resistance |
| **LIMS** | Laboratory Information Management Systems |
| **Fichier SQLITE** | Self-contained lightweight database stored in a single file on disk |
| **AST ID** | A unique identifier assigned to an antimicrobial susceptibility test |
| **CSV** | (Comma - Separated Values) text file format |
| **Msixbundle** | An archive containing multiple MSIX packages tailored for different architectures |
| **DZI** | Inhibition Zone Diameter |

# Introduction

The AST Merge is a desktop application designed to use alongside Antibiogo to simplify the management of antimicrobial susceptibility test (AST) data generated by the Antibiogo application and intended to be analysed with WHONET.

Antibiogo allows exporting AST results in an .SQLITE format, which is fully compatible with WHONET. Depending on your workflow, exports can include a single AST record or multiple ASTs.

Managing multiple files and consolidating them into a single database can be challenging, time-consuming and error-prone

The AST Merge is designed to simplify this process. With the AST merge, you can:

- Merge multiple AST SQLITE files into a single, consolidated file. This file is labelled as “destination.sqlite”, which can then be imported into WHONET for analysis.
- Maintain compatibility with WHONET, ensuring that your data remains accurate and usable.
- Save time and reduce manual errors, allowing laboratory staff to focus on analysis rather than file management.

This manual will guide you step-by-step through the use of AST merge, from extracting AST exports in Antibiogo to generating a single merged .SQLITE file, ensuring a smooth and efficient workflow.

# 1. Search and Export Results in Antibiogo

On the Antibiogo homepage, the new "**search bar**" allows users to easily find, manage, and analyze antibiogram results and now gives them the option to **export** them.

- **Search**: You can filter results by AST ID, bacteria, sample type, date of sampling or date of AST processing.
- **Export**: Results can be saved one by one or all together in CSV or SQLite format, and used with other systems like WHONET or LIMS (laboratory information management systems).

If you want to transfer your AST data[1] from Antibiogo to WHONET, ensure to extract the data in SQLite format as described in '**Search and export results**' section in page 9of the Antibiogo user manual.

**Ensure to have your SQLite files downloaded from Antibiogo available in a single folder on your desktop/PC for next steps.**

# 2. Downloading AST Merge

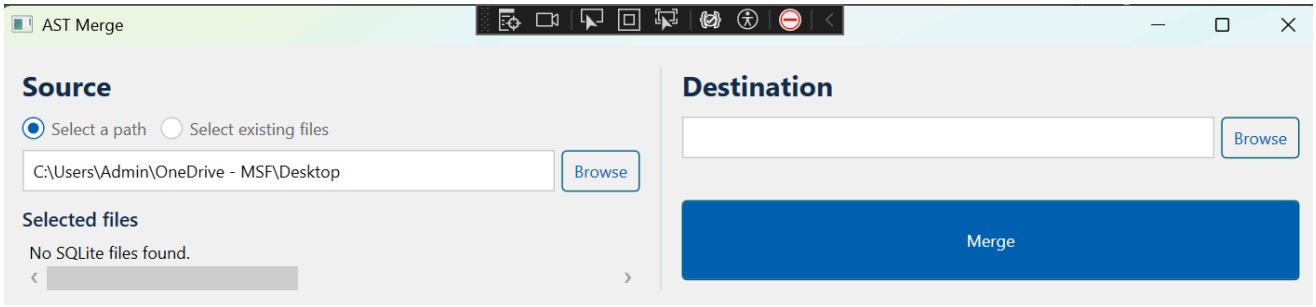
Follow this link to download the AST Merge application
https://astmerge.web.app/download/ast_merge_x64_v1.0.9.0.zip

# 3. Getting Started

1. Download the .zip file from the above link.
2. Extract the .zip file:
    a. Right-click the downloaded file.
    b. Select **"Extract All..."**.
    c. Choose a location (e.g., Desktop or Downloads) and click **Extract**.

[1] Exports generated from Antibiogo in SQLite format include the antibiotics tested and the corresponding S/I/R interpretations reported by Antibiogo. The inhibition zone diameters (IZD) are not included in the exported SQLite files.
The exports were designed to contain the S/I/R interpretations because WHONET allows the import of either S/I/R results or IZD values, but not both simultaneously. If only IZD values were exported, WHONET would automatically re-interpret these measurements using its breakpoints and interpretive rules.
By exporting the S/I/R results directly, the interpretations used in WHONET remain consistent with the interpretations provided by Antibiogo.

3. Open the extracted folder.
4. Double click on **.msixbundle** inside the folder.
5. Launches the **AST Merge** application.
6. The main window is divided into two sections:
    a. **Source** - where you select the SQLite files to merge
    b. **Destination** - where the final merged file will be saved




# 4. Merging SQLite Files

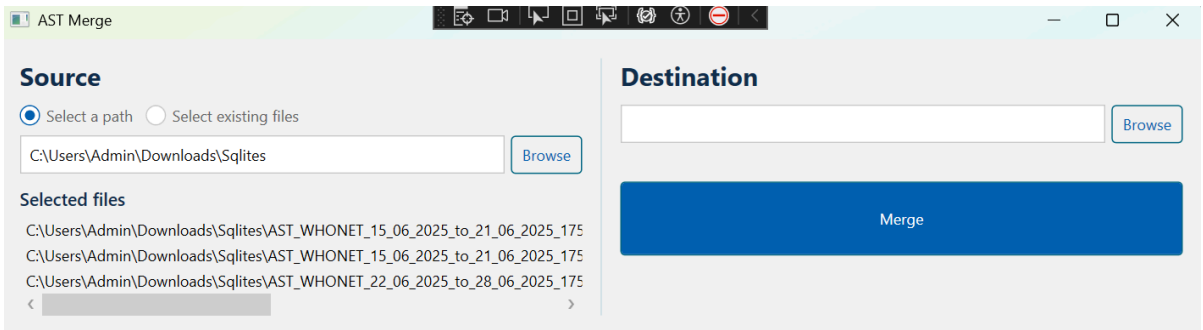
To merge your SQLite files, follow these steps:

## 4.1 Step 1: Select Source Files

You can select your source SQLite files that you exported from Antibiogo and you want to merge using one of two options:

- Option A: **Merge all files in a folder.**Select this option to quickly merge all SQLite files found in a single folder. The utility will automatically list all the files for you.
- Option B: **Manually select files.** Use this option to choose specific SQLite files from the locations on your computer.

Once you've selected your source files, they will be listed in the **"Selected files"**.



## 4.2 Step 2: Choose a Destination

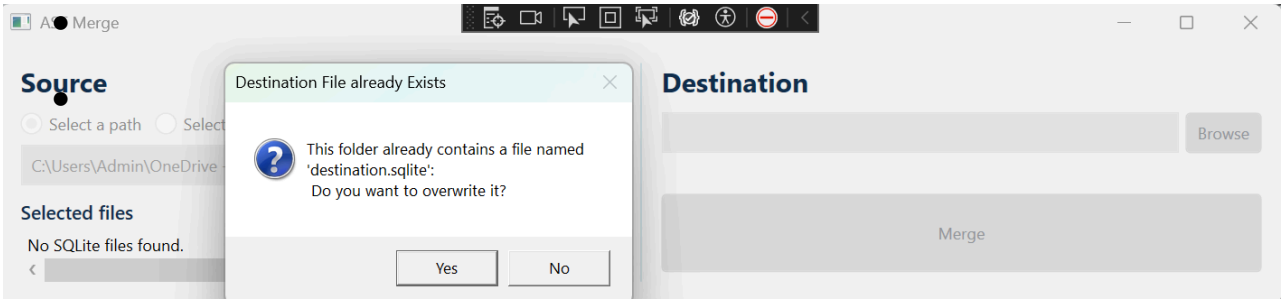
The merged file, named destination.sqlite, will be saved to the location you specify in the **Destination** section.

- Click the **Browse** button in the **Destination** section and select a folder where you want to save your merged file.

If a destination.sqlite file already exists in that folder, a pop-up window will appear. This is the most important part of the process, so read carefully!

The pop-up will ask : "**This folder already contains a file named 'destination.sqlite': Do you want to overwrite it?**".

- **Click "Yes"** if you want to **replace** the old file and start fresh. The new merged data will be saved to a completely new file.
- **Click "No"** if you want to **add to** the existing file. The new data will be added to the records already in that destination.sqlite file.




**Example when you click Yes (Overwrite)**

- Yesterday you merged 3 lab result files into destination.sqlite.
- Today you have 2 new lab result files, but you don't care about yesterday's data anymore — you only want today's merged results.
- If you click Yes, the old file will be replaced completely with the new one.
- Final result: destination.sqlite now contains only the 2 new files, nothing from yesterday.

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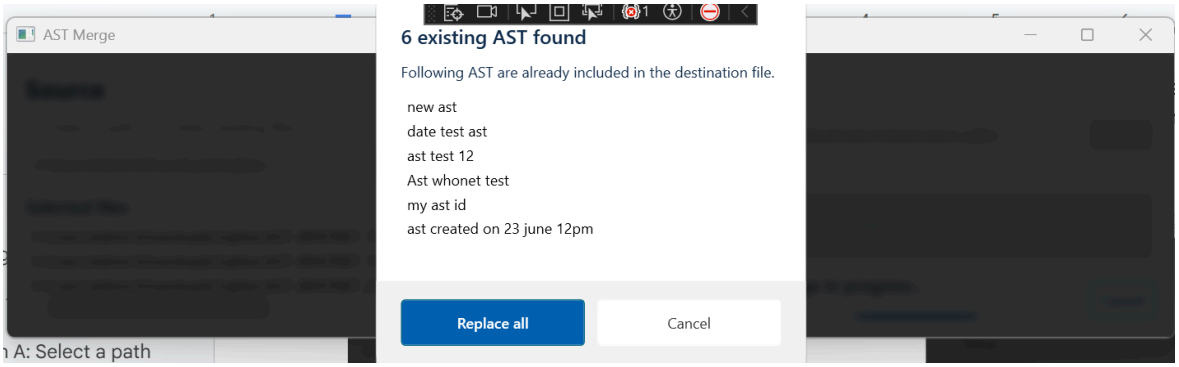
**Example when you click No (Add)**

- Yesterday you merged 3 lab result files into destination.sqlite.
- Today you have 2 new lab result files, and you want to keep both yesterday's and today's data together.
- If you click No, the new 2 files will be added to the existing 3 already in the file.
- Final result: destination.sqlite now contains data from all 5 files.

### 4.3 Step 3: Perform the Merge

1. After selecting your source files and destination folder, click the **Merge** button.
2. The utility will begin merging all the selected SQLite files into a destination.sqlite.
3. During the merge process, if any of the AST records from the source files are duplicates of records already found in destination.sqlite, a popup will appear with the message: **"Following AST are already included in destination file"**.




## 5. WHONET file upload

Upon successful completion of the merge process, the destination.sqlite file will be updated and ready for use in WHONET, allowing you to perform combined data analysis efficiently.

**Once you have your SQLite file ready, all steps will be then performed in WHONET.**

In WHONET: Open your Laboratory

1. Go to File → Open Laboratory.
2. Select the lab profile you want to open.
3. WHONET will load your laboratory setup.

In WHONET: Upload SQLite file

4. Click Data Entry → Open Data File.
5. Browse and select the SQLite file (the destination.sqlite) which is exported from Antibiogo.

6. Once you open the datafile, WHONET may display an alert: "**Code definitions were not found for the following antibiotics**". You can safely close this alert.

In WHONET: View and Edit the Data

7. Wait for a few seconds, a new window will appear.
8. Click View database.
9. After another short wait (Wait time depends on the data size that is uploaded), you will see the list of imported records.
10. Click on any record, then click "Edit isolate".

The detailed isolate window will open, showing the mapped data from the Antibiogo SQLite file.