



AIRA
AMERICAN IMMUNIZATION
REGISTRY ASSOCIATION

Data at Rest

Command Line Tool Execution

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Background

AIRA has prepared this support material to aid staff participating in Measurement and Improvement (M&I) data quality activities. This document provides step-by-step instructions to execute the Command Line Tool (CLI), a key element used as part of the measurement process for the Data at Rest (DAR) content area.

AIRA has prepared a zip file (DAR CLI.zip) that contains the command line tool, example files, and the required scripts to successfully execute the analysis. This involves four major steps

1. Unzip/Extract the DAR CLI.zip file
2. Add extracted patient and immunization files into the DAR CLI folders
3. Run the CLI tool
4. Verify the CLI results and upload the report into AART



Step One: Unzip DAR CLI.zip

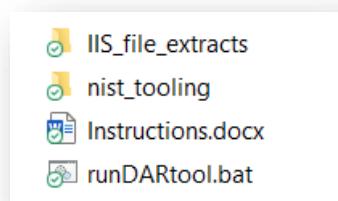


The “DAR CLI.zip” can be unzipped/extracted anywhere that is convenient with the following requirements:

- 1) The user must have permissions to write to the folder (e.g., desktop, my documents)
- 2) The user must be able to copy/paste the extracted patient and immunization file into a sub-folder (IIS_file_extracts) once unzipped.
- 3) The user has Java 8 installed on their local machine. For instructions to verify the version of Java or Java install instructions, please see [Appendix A](#).

The zip file named DAR CLI contains:

- Instructions.docx (this document)
- runDARtool.bat
- nist_tooling folder
 - a. Config file(s)
 - b. A java tool
- IIS_file_extracts folder

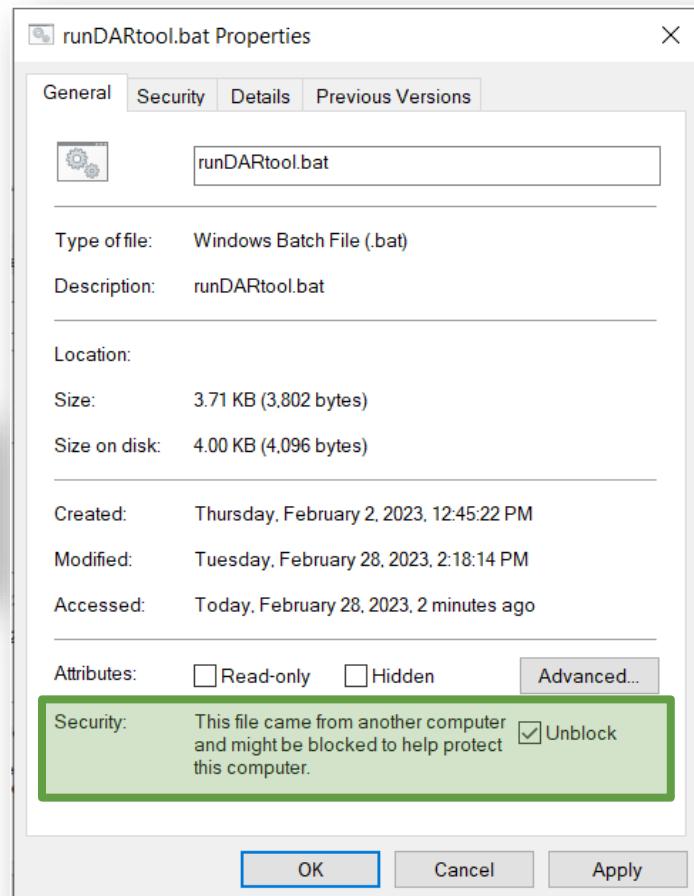
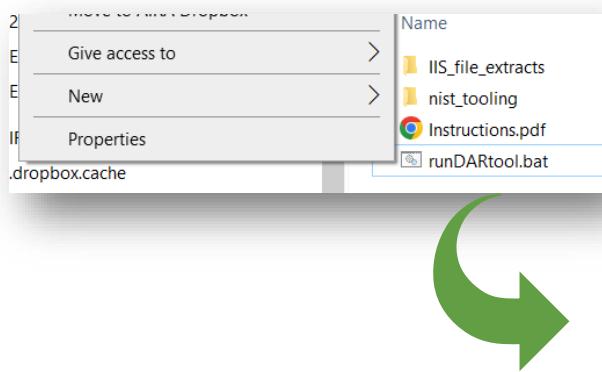


- a. Sample Patient and Immunization files for testing purposes, if desired
- b. **Note:** The extracted Patient and Immunization files will be saved into this folder



After unzipping/extracting,

- right click on the "runDARtool.bat"
- select properties
- click the checkbox to unblock the command line tool, and
- press OK.
- Note: If this doesn't appear, this step can be skipped



Step Two: Add IIS Extracted Patient and Immunization Files



Once DAR CLI is unzipped, add the IIS' extracted patient and immunization files into the "IIS_file_extracts" folder.

 **Pro Tip:** Staff should note the file names and extensions (e.g., .tsv, .txt) of the IIS patient and immunization extracts as they are key to ensure the command line tool performs the process correctly.

Step Three: Run the Command Line Tool



Once the DAR CLI.zip has been unzipped and unblocked, the IIS extracted patient and immunization files have been added in the IIS_file_extracts folder, and the file names and extensions notated, it is time to run the command line tool.

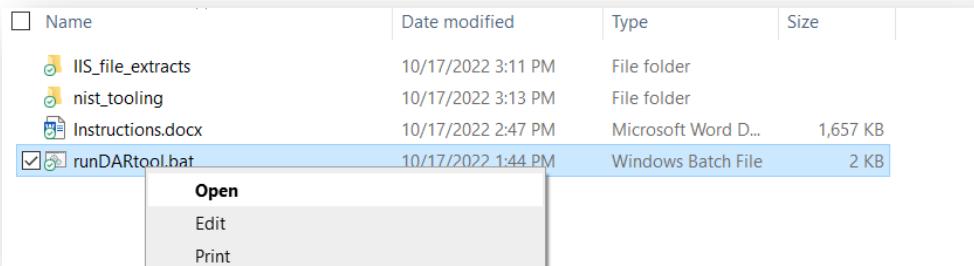
1. To run the command line, double click the “runDARtool.bat” file. A command prompt will appear. Introductory language is displayed that describes the aforementioned key steps you need to have completed before you begin. Once you have completed the steps, hit any key to move forward.

```
C:\WINDOWS\system32\cmd.exe
Hello! Welcome to the DAR command line tool. Before you begin, please confirm three items.
1) You have extraced your patient and immunization file
2) Your patient and immunization files are located in the "IIS_file_extracts" folder
3) You know the name and extension of your patient and immunization files (e.g., patient.txt, imms.tsv)

Please hit enter when you are ready. You can simply close out if not and come back later
Press any key to continue . . .
```



Pro tip: If double-clicking the .bat file does not cause it to open automatically, right click on the file and select Open. Also, make sure you have unblocked the .bat file within its Properties tab to ensure it opens.



2. Next, enter the measurement purpose, the patient file name, and the immunization file name.

In this example, we've selected DAR assessment (by entering a value of 1) and added the file names for the test files.



Pro Tip: Staff can utilize the example files to test the tooling process and see it in action.

```
Hello Welcome to the DAR command line tool.
This command line tool is used for DAR Assessment and Patient Matching - Extract Pilots
Before you begin, please confirm three items.
1) You have extracted your patient and immunization file
2) Your patient and immunization files are located in the "IIS_file_extracts" folder
3) You know the name and extension of your patient and immunization files (e.g., patient.txt, imms.txt)

Email AIRA at aart@immregistries.org with any questions
Please hit enter when you are ready. You can simply close out if you are not ready and come back later.
Press any key to continue . . .

Please confirm the measurement purpose (enter 1 for DAR Assessment or 2 for Patient Matching - Extract Pilot):1
Please enter the name of your patient file (e.g., Patient.txt):SamplePatientFile - 2026 Assessment.txt
Please enter the name of your immunization file (e.g., Immunization.txt):SampleImmFile - 2026 Assessment.txt
```

3. After entering the patient and immunization files names, the tool will start running. The screen will indicate progress as the values change.

```
=====
] / 52.82% (159/301)(Estimated Remaining Processi
] ? 59.14% (178/301)(Estimated Remaining Processi
] \ 66.11% (199/301)(Estimated Remaining Processi
] | 71.76% (216/301)(Estimated Remaining Processi
] / 75.08% (226/301)(Estimated Remaining Processi
] ? 79.73% (240/301)(Estimated Remaining Processi
] \ 87.71% (264/301)(Estimated Remaining Processi
] / 96.68% (291/301)(Estimated Remaining Processi
] / 100.0% (301/301)(Estimated Remaining Processi
=====
[=====] / 100.0% (301/301)(Estimated Remaining Processi
ng Time 0 min, 0 sec)
Analysis Finished - Exporting Results
Results Exported - END

=====
+-----+-----+-----+
|-----|-----|-----|
+-----+-----+-----+
RESULTS
+-----+-----+-----+
We have been able to successfully parse your patient and immunization file, but you're not out of the woods yet!
Please review the darg-analysis/summary/index.html file to verify the following sections
1) Summary Counts: These should reflect counts of the data you extracted.
2) Issues: All issues should be resolved it all possible.
3) Age Groups: These should reflect the distribution of your age cohorts.
4) Extraction Completeness: The percentages by field name reflect the data you extacted.

Once you have verified the above information, please log into AART and upload your "darg-analysis/ADF.data" file
Please save your "darg-analysis" folder and data. You'll utilize this later on.
Please email AIRA at aart@immregistries.org if you have any questions or need assistance.

Press any key to continue . . .
```

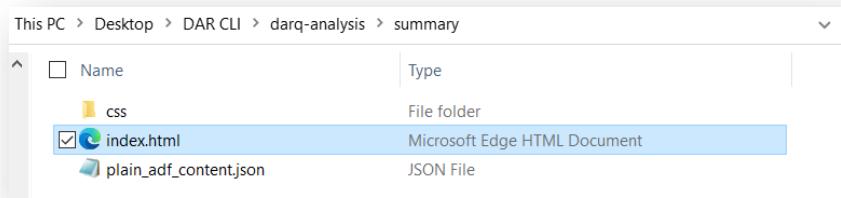
- If you do not see regular progress or the command finishes extremely quickly, there was an error. Please see the [troubleshooting](#) section of this guide for more information.

- i. **Note:** tool processing times can vary, primarily due to file size. Larger files often require longer processing times.
- b. Upon completion new files and folders will appear
 - i. **darq-analysis** folder (See [Review the Results](#) section)
 - ii. **Temporary Folder:** A randomly named temporary folder may still exist. This entire folder and its contents can be deleted whenever you wish. The command line tool attempts to delete these but isn't always successful. A new one will be created with each execution of the command line tool.
 - iii. **darq_cli.log file:** Although this file can be helpful for troubleshooting, it does not need to be retained and can be easily regenerated.

Step Four: Review the Results



1. Open the **darq-analysis** folder, double-click the *summary* subfolder, and then double-click on **index.html** to display a summary of your extracted data.



Pro Tip: A unique **darq-analysis** folder will be created ending with a timestamp (e.g., "darq-analysis_<date_time>") with each execution of the command line tool.

2. From the index.html file, please verify
 - a. The "Summary Counts" are accurate
 - b. All "Issues" are resolved
 - c. The "Age Groups" reflect your cohort

- d. The “Extract Completeness” (not shown on graphic) reflect your data by field
- e. **Note:** If you feel the summary data does not represent the data you extracted, there may be a disconnect between what was extracted and how the DAR command line tool parsed that data. Please double check your extract scripts and process. You can also reach out to AIRA at aart@immregistries.org to discuss issues with AIRA.

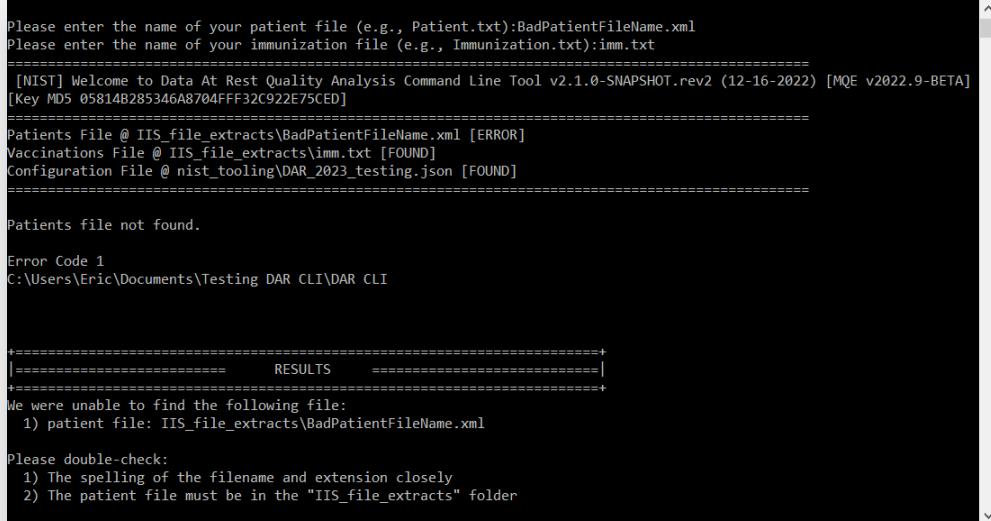
3. Once you have verified the file, move onto the “upload documentation” steps (<https://repository.immregistries.org/resource/dar/>).

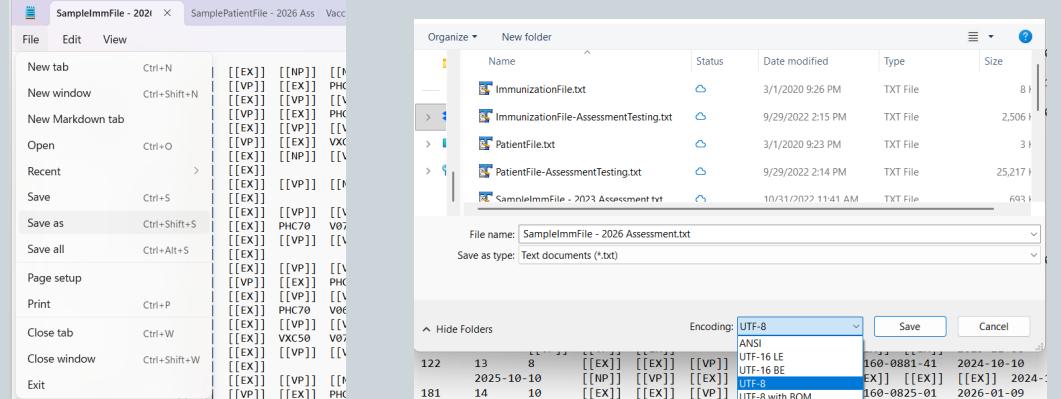
NIST Data Quality Detection Summary		Run on 10/25/2022 As 12/31/2021
Metadata		
CLU Version	2.0.3	
CLU Build Date	09-09-2022	
MQE Version	2021.9-BETA	
Total Analysis Time	00 hours 00 minutes 58 seconds 714 milliseconds	
Summary Counts		
Label		Count
Total Read Patient Records	10493	
Total Skipped Patient Records Due To Errors	0	
Total Skipped Vaccination Records Due To Errors	0	
Total Read Vaccination Records	160008	
Minimum Vaccinations per Patient	4	
Maximum Vaccinations per Patient	30	
Average Vaccinations per Patient	15	
Total Number of Providers	16	
Issues (maximum output 50)		
Description		
Age Groups		
Age Group		Count
birth -> 1 month	396	
1 month -> 2 months	424	
2 months -> 3 months	442	
3 months -> 4 months	413	
4 months -> 5 months	443	
5 months -> 6 months	453	
6 months -> 7 months	431	
7 months -> 8 months	447	
8 months -> 9 months	411	

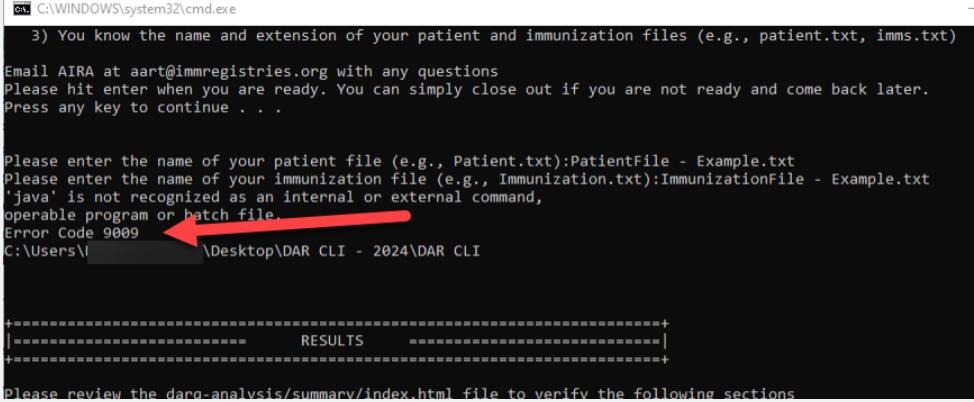
Troubleshooting

If you run into problems and need help, please reach out to aart@immregistries.org for assistance. We are more than happy to set up a quick call to work through challenges.

Whenever the command line tool is unable to execute properly an error is returned. The last output of the command line tool is a “Results” section. This will attempt to identify the error and provide corrective action up to and including reaching out to AIRA for further support. Here are the most common errors encountered during initial rollout.

Issue	Double check the following
Patient file not found	<p>1) The spelling of the filename and extension (e.g., .txt) were entered wrong</p> <ol style="list-style-type: none">Double check the extension in your file browser. Some extensions were hidden from view, but were still presentSome had “double extensions” (e.g., patientFile.txt.txt)You can view your extension in your file browser by clicking on View and then checking “File Name Extensions” <p>2) The patient file isn’t in the “IIS_file_extracts” folder</p> <ol style="list-style-type: none">The patient file must be in this folder 
Immunization file not found	<p>1) The spelling of the filename and extension (e.g., .txt) were entered wrong</p> <ol style="list-style-type: none">Double check the extension in your file browser. Some extensions were hidden from view, but were still presentSome had “double extensions” (e.g., patientFile.txt.txt)You can view your extension in your file browser by clicking on View and then checking “File Name Extensions”

	<p>2) The immunization file isn't in the "IIS_file_extracts" folder</p> <p>a. The patient file must be in this folder</p>
Patient and immunization file not found	<p>This error is a combination of the first two errors. In this case, both files were unable to be found. Both must be corrected.</p>
Wrong Encoding	<p>Patient and Immunization files must be encoded as UTF-8. If they are not, you will see the following error:</p> <pre>+=====+ ===== RESULTS ===== +=====+ The patient or immunization file is not saved with UTF-8 encoding. Please open your files in Notepad (or similar) and change the Encoding Type to UTF-8 via File -> Save As. See the troubleshooting section of the User Guide for more detailed instructions. Please email AIRA at aart@immregistries.org if you have any questions or need assistance. Press any key to continue . . . </pre> <p>To resolve this error, open your patient or immunization file in Notepad (or similar), select File -> Save As and then change the encoding Type to UTF-8</p> 

Error Code 9009	<p>This error, usually with language suggesting “java”, is not a recognized command and it likely means that java is not installed. Please follow the Java install instructions in Appendix A.</p> 
Out of Memory Error	<p>Some IIS experience an out of memory error. When this happens, the tool will ask for more memory. Every system is different so no single value will work for everyone. We often suggest starting with a value of 10 (representing 10 GB). You may need to specify a smaller number (if your system can't allocate 10 GB) or a larger number (if 10 wasn't successful). Trial and error is best way to resolve an out of memory error.</p>
Other errors	<p>There are also other possible errors, but they will likely require the aid of AIRA to course correct. If you experience one of these, please take a screen shot of the command line prompt (with as much information as possible) and send that to aart@immregistries.org</p>

Appendix A: Java Instructions

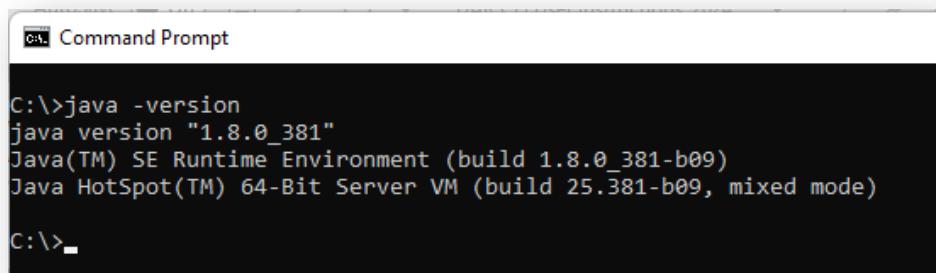
This appendix provides instructions on how to verify the version of java and installation instructions should java need to be installed.

Verifying Java Version

There are two ways to verify your java version. The first method is preferred, but slightly more technical.

Method 1: Command Prompt

- 1) Open a command prompt (type cmd in windows search)
- 2) Type "java -version"
- 3) Ensure it is java 8 (e.g., 1.8.*)



```
C:\>java -version
java version "1.8.0_381"
Java(TM) SE Runtime Environment (build 1.8.0_381-b09)
Java HotSpot(TM) 64-Bit Server VM (build 25.381-b09, mixed mode)

C:\>_
```

Method 2: Windows applications

- 1) Launch the Windows Start menu
- 2) Click on Programs
- 3) Find the Java program listing
- 4) Click About Java to see the Java version
- 5) Ensure it is Java 8 (e.g., 1.8.*)



Installing Java

- 1) Visit <https://www.java.com/en/download/>
- 2) Download the file by clicking the "Download Java" button.

The screenshot shows the Java download page. On the left, there's a sidebar with links for Help Resources (What is Java?, Remove older versions, Disable Java, Error messages, Troubleshoot Java, Other help), Windows 64-bit Users (Do you use both 32-bit and 64-bit browsers?, FAQ about 64-bit Java for Windows), and Offline Installation (Trouble downloading? Try the offline installer). The main content area has a yellow box titled "Important Oracle Java License Information" with text about the license change and a link to the FAQ. Below it, a note says "Commercial license and support is available with a low cost Java SE Subscription." At the bottom, there's a warning about Edge browser's IE mode and a "Download Java" button. A note below the button states: "By downloading Java you acknowledge that you have read and accepted the terms of the Oracle Technology Network License Agreement." The URL <https://www.java.com/otnlicense/> is visible at the bottom left.

- 3) Open the file you downloaded and click Install.

The screenshot shows the Java Setup - Welcome window. It displays the "Welcome to Java - Updated License Terms" screen. The text on the screen states: "The terms under which this version of the software is licensed have changed." with a link to "Updated License Agreement". It continues: "This version of the Java Runtime is licensed only for your personal (non-commercial) desktop and laptop use. Commercial use of this software requires a separate license from Oracle or from your software vendor. Click Install to accept the license agreement and install Java now or click Remove to uninstall it from your system. No personal information is gathered as part of our install process. [Details on the information we collect](#)". At the bottom, there are buttons for "Change destination folder", "Install", and "Remove".

The screenshot shows the Java Setup window with a status bar at the bottom that reads "Status: Installing Java".

The screenshot shows the Java logo (a steaming coffee cup) and the text "Java™ ORACLE". Below it, the text "#1 Development Platform" and "ORACLE" are visible.