



AIRA
AMERICAN IMMUNIZATION
REGISTRY ASSOCIATION

Data at Rest

Command Line Tool Execution

December 2023

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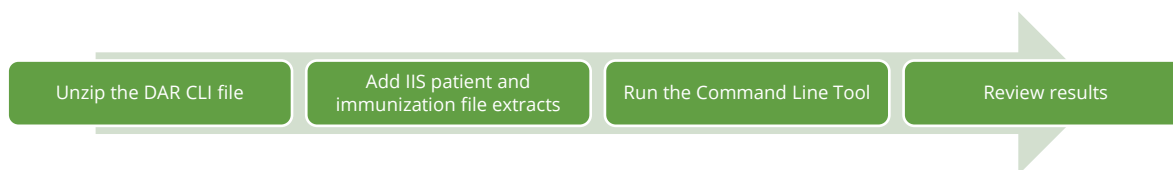
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Background

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 4 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

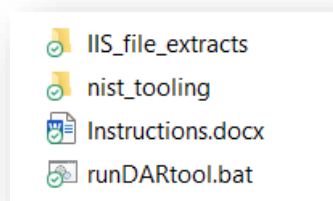


The “DAR CLI.zip” can be unzipped/extracted anywhere that is convenient with the following requirements:

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

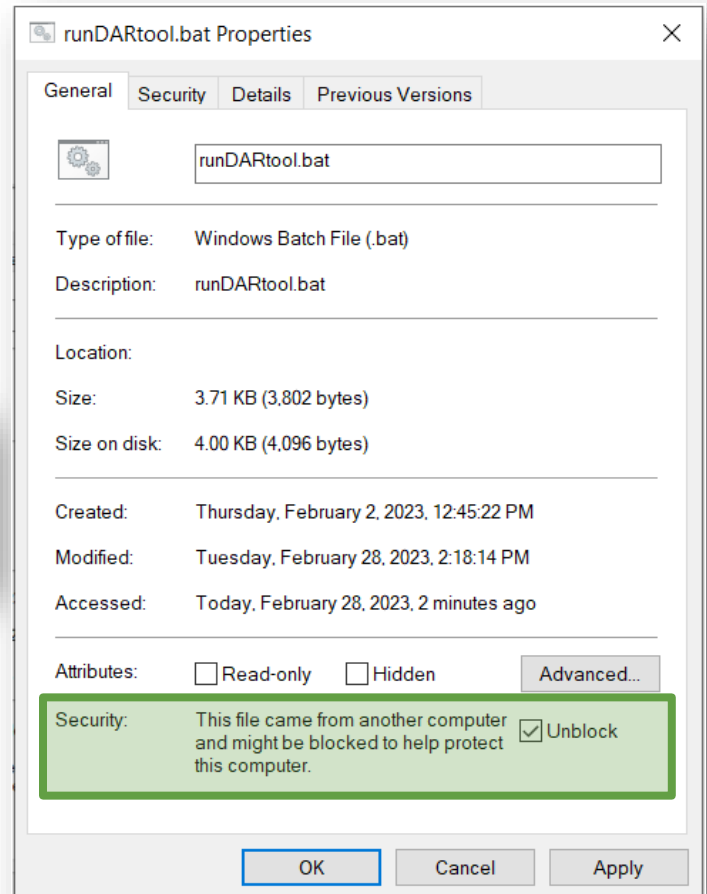
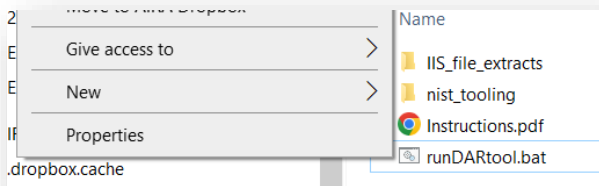


- a. Sample Patient and Immunization files for testing purposes, if desired
- b. **Note:** The extracted Patient and Immunization files will be saved into this folder

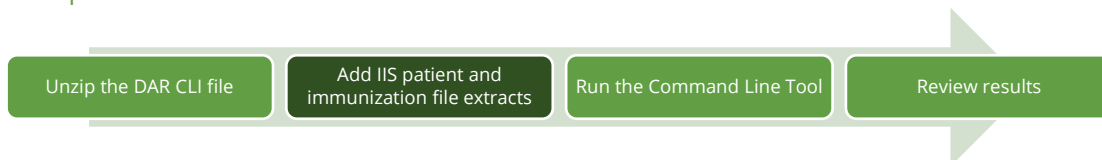


After unzipping/extracting,

- 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. 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

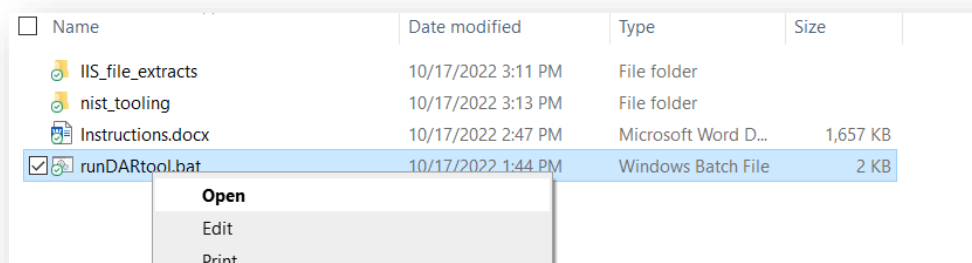


Once the DAR CLI.zip has been unzipped and unblocked, the IIS extracted patient and immunization files have been added in the IIS_file_extracts folder, and the file names and extensions notated, it is time to run the command line tool.

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 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.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, you can 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 file names for the IIS-extracted Patient and Immunization files.

In this example, we've 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.

```
C:\WINDOWS\system32\cmd.exe
Hello! Welcome to the DAR command line tool. 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 enter the name of your patient file (e.g., Patient.txt):PatientFile-Example.txt
Please enter the name of your immunization file (e.g., Immunization.txt):ImmunizationFile-Example.txt_
```

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

```

C:\WINDOWS\system32\cmd.exe
[=====] / 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

ng Time 0 min, 0 sec)
Analysis Finished - Exporting Results
Results Exported - END

=====+
===== RESULTS =====+
=====+

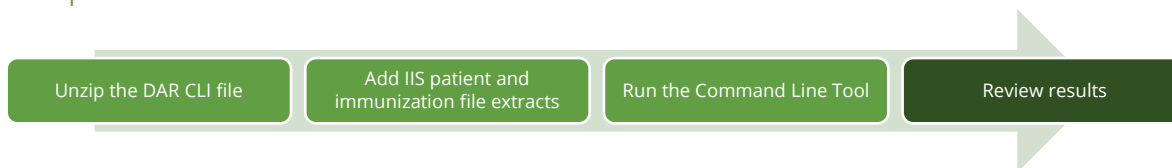
We have been able to successfully parse your patient and immunization file, but you're not out of the woods yet!
Please review the darq-analysis/summary/index.html file to verify the following sections
  1) Summary Counts: These should reflect counts of the data you extracted.
  2) Issues: All issues 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 "darq-analysis/ADF.data" file
Please save your "darq-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.

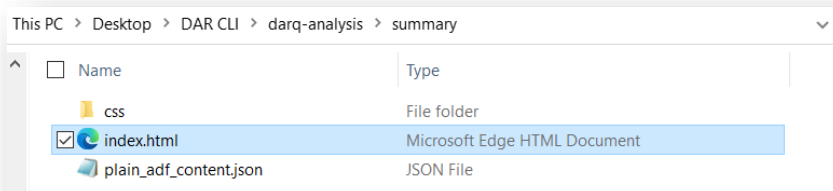
Press any key to continue . . .

```

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.



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) reflect your data by field

e. More details on this step can be found here:

https://repository.immregistries.org/files/resources/5e31beef2ef2d/9_dar_transform_guide.pdf - See Task 4: Review Summary.

NIST Data Quality Detection Summary		Run on 10/25/2022 As 12/31/2021
Metadata		
CLI Version	2.0.3	
CLI 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	160088	
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	

3. Once you have verified the above, move onto the upload documentation

(<https://repository.immregistries.org/resource/dar/>).

- a. **Note:** If you feel the summary data does not represent the data you extracted there is 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.

Troubleshooting

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

Patient and immunization file not found	This error is a combination of the first two errors. In this case, both files were unable to be found. Both must be corrected.
Error Code 9009	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 .
Out of Memory Error	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.
Other errors	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

Here is an example of a patient file not found error:

```

Please enter the name of your patient file (e.g., Patient.txt):BadPatientFileName.xml
Please enter the name of your immunization file (e.g., Immunization.txt):imm.txt
=====
[NIST] Welcome to Data At Rest Quality Analysis Command Line Tool v2.1.0-SNAPSHOT.rev2 (12-16-2022) [MQE v2022.9-BETA]
[Key MD5 05814B285346A8704FFF32C922E75CED]
=====
Patients File @ IIS_file_extracts\BadPatientFileName.xml [ERROR]
Vaccinations File @ IIS_file_extracts\imm.txt [FOUND]
Configuration File @ nist_tooling\DAR_2023_testing.json [FOUND]
=====

Patients file not found.

Error Code 1
C:\Users\Eric\Documents\Testing DAR CLI\DAR CLI

+=====+
|-----RESULTS-----|
+=====+

We were unable to find the following file:
1) patient file: IIS_file_extracts\BadPatientFileName.xml

Please double-check:
1) The spelling of the filename and extension closely
2) The patient file must be in the "IIS_file_extracts" folder

```

Here is an example of Error 9009:

```
C:\WINDOWS\system32\cmd.exe
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 enter the name of your patient file (e.g., Patient.txt):PatientFile - Example.txt
Please enter the name of your immunization file (e.g., Immunization.txt):ImmunizationFile - Example.txt
'java' is not recognized as an internal or external command,
operable program or batch file.
Error Code 9009
C:\Users\I\ Desktop\ DAR CLI - 2024\ DAR CLI

+=====+
|===== RESULTS =====|
+=====+

Please review the darg-analysis/summary/index.html file to verify the following sections
```

Appendix A: Java Instructions

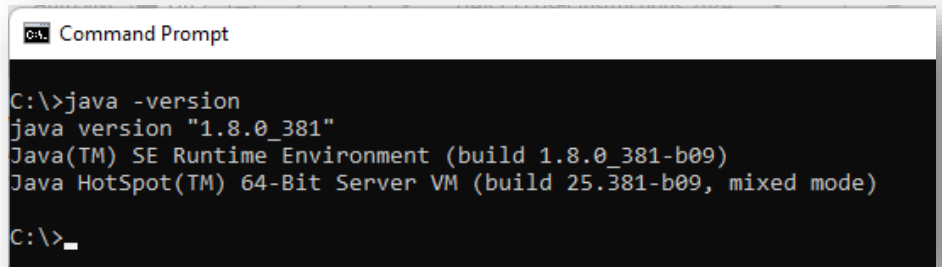
This appendix provides instructions on how to verify the version of java and installation instructions should java need to be installed.

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

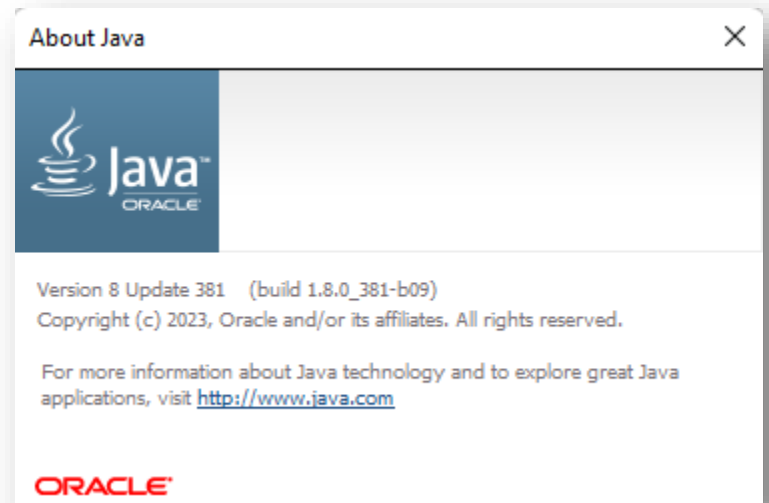
- 1) Open a command prompt (type cmd) in windows search
- 2) Type "java -version"
- 3) Ensure it is java 8 (e.g., 1.8.*)



```
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

Visit <https://www.java.com/en/download/>

The screenshot shows the Oracle Java download page for Windows. On the left, there is a sidebar with '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 is titled 'Download Java for Windows' and shows 'Version 8 Update 391 (filesize: 64.37 MB)' with a release date of October 17, 2023. A yellow box contains 'Important Oracle Java License Information' stating that the license changed starting April 16, 2019, and that the Oracle Technology Network License Agreement for Oracle Java SE is substantially different from prior licenses. Below this, a warning icon indicates that in Windows 10, the Edge browser supports IE mode which will run Java. At the bottom, there is a green 'Download Java' button and a link to the license page: <https://www.java.com/otnlicense/>. A footer note states: 'By downloading Java you acknowledge that you have read and accepted the terms of the Oracle Technology'.

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](#)

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Version 8 Update 391 (filesize: 64.37 MB) [Why is Java 8 recommended?](#)


Release date: October 17, 2023

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 In Windows 10, the Edge browser supports IE mode which will run Java ([What is IE mode?](#))

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