NIAS

NSIP Integration As a Service

NAPLAN Student Registration Data Validation

NAPLAN Results Reporting Data – NAPRR

Installation and User Guide v21

Version history

Version	Date	Notes
V01	4/07/2017	Initial release
V02	10/07/2017	Added Mac user install information
V03	15/08/2017	Added graphql information
V04	09/10/2017	Added v0.99 updates
V05	27/02/2018	Minor updates
V06	17/07/2018	Added Results Reporting Validation/QA reports
V07	07/08/2018	Added updates to NAPVAL validation
V08	29/08/2018	Added Results Reporting Validation reports
V09	11/09/2018	Added Results Reporting Validation reports
V10	04/12/2019	Added to System reports, updates to saving queries
V11	26/02/2019	Added to System reports, updates to acceptable characters in napval.toml file
V12	12/03/2019	Updated redaction
V13	02/05/2019	Updated redaction
V14	06/03/2020	Updated redaction
V15	03/12/2020	Updated redaction
V16	14/04/2020	Splitter functionality, removed GraphQL interface
V17	11/05/2022	Finalised NIAS 2.0.0 documentation of naprrql
V18	16/06/2022	Warning on item report interpretation
V19	26/06/2023	XML redaction per-school
V20	09/10/2023	Miscellaneous updates
V21	18/11/2024	Miscellaneous updates

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Section 1 – NSIP Integration As a Service (NIAS)

1.1 What is NIAS?

NIAS is a suite of open-source components designed to enable as many different users as possible to quickly and easily solve issues of system integration using the Australian SIF Data Model for education. The use of NIAS documented here is for the processing of data around NAPLAN.

The components in the current release perform the following functions:

- Validation of Student Registration data for NAPLAN
- Reporting of NAPLAN Results and Reporting data
- Audit validation between Student Registration data and Results and Reporting data
- Generation of writing extracts for marking under NAPLAN

These tools are provided for the use of Test Administration Authorities (TAA) and jurisdictions responsible for the upload of NAPLAN Online student registration data to the National Assessment Platform, and the download and processing of NAPLAN results and reporting datasets from the Platform.

The writing extracts functionality is documented separately in the *NIAS Writing Extract User Guide*.

NIAS Data Validation (NAPVAL)

The data validation tool allows student registration data files in either .csv or .xml format to be validated to check data format, that mandatory fields in the files are populated, and that the fields are valid against the Registration Data Set specifications.

NAPVAL will also convert .csv files to .xml SIF format once the user is satisfied with the validation.

The user loads the student registration file into the interface, and the validation tool will produce a report of any errors or warnings found, which can be viewed on screen or downloaded. Once the file is validated, users can be confident in uploading the file to the National Assessment Platform for student registration.

NAPLAN Results and Reporting (NAPRRQL)

NAPRRQL is a package allowing reporting and browsing of NAPLAN results and reporting data files, for a particular state, sector or schools, provided as a SIF .xml file from the National Assessment Platform.

The user loads the results and reporting file through a command line interface, and NAPRRQL will produce a number of .csv reports for the entire file. It can optionally also break the generated reports down by school, domain, year level, or any combination of the three.

A number of other QA and validation tools can be run using NAPRRQL. The use of these is described in detail further in this document. The table below provides a summary of what is available.

NIAS Validation Tool	Purpose	Refer to
naprrql.exe -ingest	Ingests results and reporting data. Overwrites existing data.	Section 3

	All other functions will reingest the data by default.	
naprrql.exe -skipingest	Do not reingest the data: assumes ingest has already been done. Is used in combination with another reporting option.	Section 3
naprrql.exe -inputFolder …	Specify the input folder to read the RRD from. If omitted, files are read from the folder "./in".)	Section 3
naprrql.exe -report	Generates core reports in csv format.	Section 3, 5.3, 5.4
naprrql.exe -qa	Generates csv files for validation and checking, in addition to the files generated in **report**. Recommend this is run before other tools for checking prior to generating reports.	Section 5.2
naprrql.exe -itemprint	Generates csv file reporting item results for each student against items. (This is excluded from **report**, because these reports are much more time consuming to generate.)	Section 5.5
naprrql.exe -xml	Re-extracts redacted xml from Results and reporting dataset	Section 5.6
naprrql.exe -writingextract	Extract all writing scripts for marking.	See *NIAS Writing Extract User Guide* in nap-writing-print folder
naprrql.exe -allReports	Run all reports: includes the reports under **report**, **qa**, **itemprint**, and **writingextract**	

Audit Differences (NAPCOMP)

NAPCOMP allows comparison between a NAPLAN Student Registration file (in csv format) and a corresponding Results and Reporting data file received for the same cohort.

The user loads both files into various folders and the executable produces a .txt file which calls out differences where students appear in only one file and not the other. For example, a student may be in the registration data file, but not the results and reporting dataset or vice versa.

None of these components have dependencies and can be run independently at any time.

Please note that instructions and screenshots included in this document are created using sample data which may not reflect realistic scores or results.

1.2 Installation

Installation of the NIAS tool loads all of the components as described on previous pages.

Pre-requisites

NIAS can be installed on Windows (64-bit), Linux (64-bit), or Macintosh. For the Windows installation you will need a Windows PC with the latest version of either Google Chrome or Mozilla Firefox installed. The Macintosh version works on Chrome, Firefox and Safari.

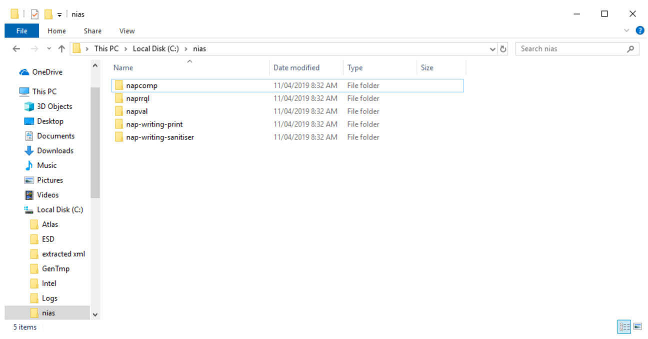
The NIAS toolset takes up approximately 100MB in hard disk space. You will also need enough hard disk space available to store a copy of the RRD file, and all the reports it generates.

Installing files

1. Click on the following URL, or enter it in your browser:
   https://github.com/nsip/nias2/releases

2. Click on the relevant installation file to download the NIAS tools.

3. **Extract the contents of the go-nias.zip file** to a suitable high-level folder
   e.g.: C:\NIAS



Name	Date modified	Type	Size
napcomp	11/04/2019 8:32 AM	File folder	
naprrql	11/04/2019 8:32 AM	File folder	
napval	11/04/2019 8:32 AM	File folder	
nap-writing-print	11/04/2019 8:32 AM	File folder	
nap-writing-sanitiser	11/04/2019 8:32 AM	File folder	

***Note:** Don’t nest the folder structure too deeply in Windows; this can have an impact on permissible file name length.*

The installation loads 5 folders.

- **Napval** – enables validation of .csv or .xml files prior to loading into the NAPLAN Online Student Registration Management system
- **Naprrql** – converts results and reporting dataset into a number of NAPLAN school reports, provides tools for querying results and reporting data, and also contains an audit function
- **Napcomp**—contains an audit function allowing comparison of a NAPLAN Student Registration Data file against a NAPLAN Results and Reporting file.
- **Nap-writing-print** and **nap-writing-sanitiser**. These files are further discussed in the *NIAS Writing Extract User Guide*.

Also included in the installation are sample files with which to run the NAPLAN Validation and the NAPLAN Results and Reporting tool. These are further discussed in the NAPVAL and NAPRRQL section of this document.

1.3 Updating & Removing NIAS Tools

The tools can be updated by deleting existing folders and downloading a newer version from *https://github.com/nsip/nias2/releases* (Subscribe to this link to be notified of updates to the NIAS tools.)

1.4 Conditions of Data Download

Education Services Australia Limited (ESA):

- complies with the Privacy Act 1988 (Cth) to maintain the privacy of personal information contained within each data extract or report including School Student Summary Report (SSSR) and Individual Student Report (ISR) (Data) while it is stored on the Assessment platform;
- is unable to control the use of the Data once it has been downloaded from the Assessment platform.

In order to maintain the privacy of the Data after you have downloaded it, prior to accessing and downloading the Data, you confirm and agree that:

- you are authorised to access and download the Data;
- your organisation has privacy and security controls in place in order to protect the privacy and security of the Data; and
- you will take all reasonable steps to ensure that the Data will not be misused, interfered with, lost, modified or disclosed to unauthorised personnel.

If you do not agree to the above conditions, **you must not** access and/or download the Data.

Section 2 – Validating NAPLAN Student Registration Data Using NAPVAL

Prior to commencing it is assumed that you have a NAPLAN Student Registration data file in the structure contained in the Student Registration Data Specifications v2.0. The file can be .csv or .xml format. Data files in .csv format can be converted to .xml using this tool.

The main changes to the validation process from earlier versions of NIAS (in accordance with updates to the Student Registration Data Specifications) are:

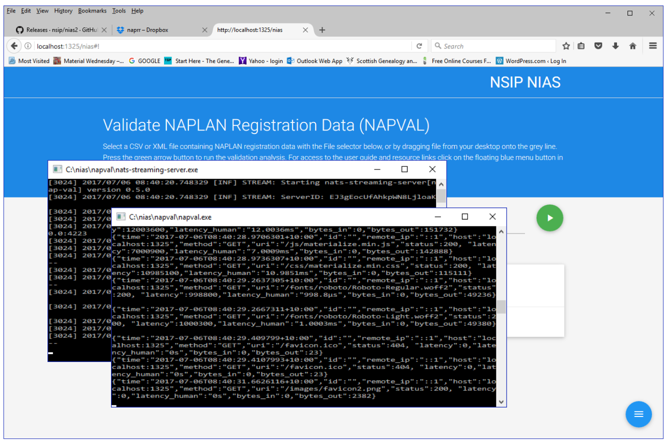
- Address Fields are no longer required for the platform, so NIAS will report an error if any address fields are populated.
    - The validation will report an error for fields that are defined in SIF but are out of scope of the Registration data set, which now includes addresses.
    - NIAS is intended for XML conversion as an output for the platform, so extra fields not defined in the CSV will not get converted to XML and therefore not uploaded to the platform.

- Visa codes have been updated

Please refer to v2.0 of the specifications for more detail. A copy is available at https://github.com/nsip/registration-data-set

2.1 Running the Validation

1. On Windows: To run the validation, navigate to the **napval** subfolder and double-click on **gonapval.bat**. This launches the various components and services of NIAS. On Macintosh and Linux: start **gonapval.sh** from the command line.
2. On launch in Windows, **gonapval.bat** opens a separate command prompt/terminal window for each of the NAPVAL key executables (napval.exe and nats-streaming-server.exe) and launches the NAPVAL web UI using your default web browser (Google Chrome and Mozilla Firefox are supported currently). On Macintosh and Linux, the other executables are launched in the same terminal window; you will need to access the browser to launch NAPVAL yourself, entering the address **localhost:1325**.
   Note: *If your default web browser is set to IE or another unsupported browser, the UI may not function correctly.*



Validate NAPLAN Registration Data (NAPVAL)

Select a CSV or XML file containing NAPLAN registration data with the File selector below, or by dragging file from your desktop onto the grey line. Press the green arrow button to run the validation analysis. For access to the user guide and resource links click on the floating blue menu button in

C:\nias\napval\nats-streaming-server.exe

```
[3024] 2017/07/06 08:40:20.748329 [INF] STREAM: Starting nats-streaming-server[n
ap-val] version 0.5.0
[3024] 2017/07/06 08:40:20.748329 [INF] STREAM: ServerID: EJ3gEocUfAhkpWN8LjloaK

[3024] 2017/0
[3024] 2017/0
[3024] 2017/0
0.0:4223
[3024] 2017/0
[3024] 2017/0
[3024] 2017/0
--
[3024] 2017/0
[3024] 2017/0
--
[3024] 2017/0

[3024] 2017/0

[3024] 2017/0
[3024] 2017/0
[3024] 2017/0
--
```

C:\nias\napval\napval.exe

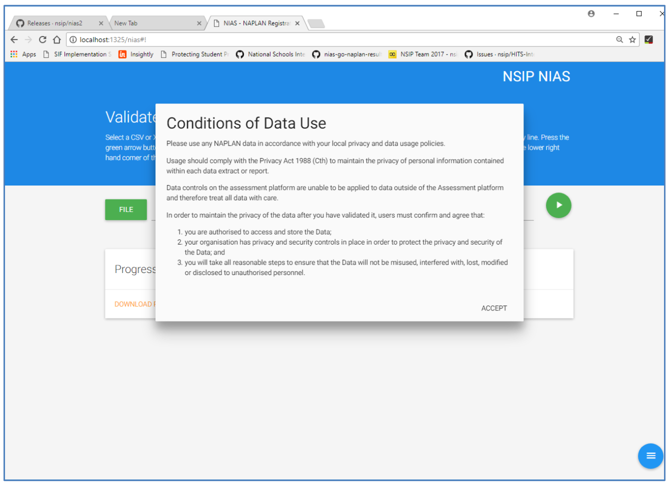
```
y":12003600,"latency_human":"12.0036ms","bytes_in":0,"bytes_out":151732}
{"time":"2017-07-06T08:40:28.9706301+10:00","id":"","remote_ip":"::1","host":"lo
calhost:1325","method":"GET","uri":"/js/materialize.min.js","status":200, "laten
cy":7000900,"latency_human":"7.0009ms","bytes_in":0,"bytes_out":142888}
{"time":"2017-07-06T08:40:28.9736307+10:00","id":"","remote_ip":"::1","host":"lo
calhost:1325","method":"GET","uri":"/css/materialize.min.css","status":200, "lat
ency":10985100,"latency_human":"10.9851ms","bytes_in":0,"bytes_out":115111}
{"time":"2017-07-06T08:40:29.2637305+10:00","id":"","remote_ip":"::1","host":"lo
calhost:1325","method":"GET","uri":"/fonts/roboto/Roboto-Regular.woff2","status"
:200, "latency":998800,"latency_human":"998.8µs","bytes_in":0,"bytes_out":49236}

{"time":"2017-07-06T08:40:29.2667311+10:00","id":"","remote_ip":"::1","host":"lo
calhost:1325","method":"GET","uri":"/fonts/roboto/Roboto-Light.woff2","status":2
00, "latency":1000300,"latency_human":"1.0003ms","bytes_in":0,"bytes_out":49380}

{"time":"2017-07-06T08:40:29.409799+10:00","id":"","remote_ip":"::1","host":"loc
alhost:1325","method":"GET","uri":"/favicon.ico","status":404, "latency":0,"late
ncy_human":"0s","bytes_in":0,"bytes_out":23}
{"time":"2017-07-06T08:40:29.4107993+10:00","id":"","remote_ip":"::1","host":"lo
calhost:1325","method":"GET","uri":"/favicon.ico","status":404, "latency":0,"lat
ency_human":"0s","bytes_in":0,"bytes_out":23}
{"time":"2017-07-06T08:40:31.6626116+10:00","id":"","remote_ip":"::1","host":"lo
calhost:1325","method":"GET","uri":"/images/favicon2.png","status":200, "latency
":0,"latency_human":"0s","bytes_in":0,"bytes_out":2382}
```

Important: These windows can be minimised but should not be closed whilst running NAPVAL. Closing these windows terminates that component of the NAPVAL validation tool.

3. The NAPVAL Web UI is displayed. Users are asked to confirm privacy policy on first run – click ACCEPT to continue.


NSIP NIAS

Conditions of Data Use

Please use any NAPLAN data in accordance with your local privacy and data usage policies.

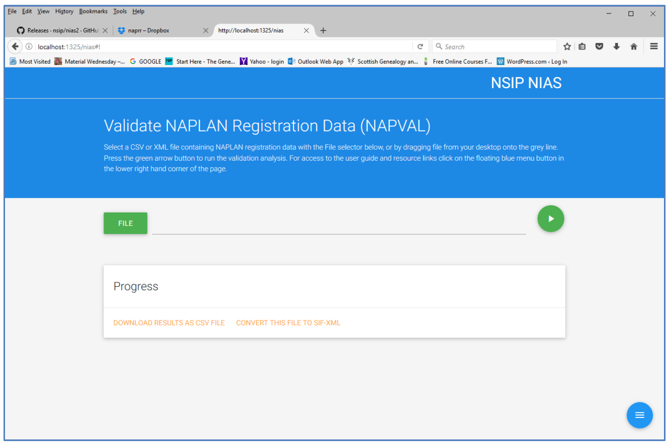
Usage should comply with the Privacy Act 1988 (Cth) to maintain the privacy of personal information contained within each data extract or report.

Data controls on the assessment platform are unable to be applied to data outside of the Assessment platform and therefore treat all data with care.

In order to maintain the privacy of the data after you have validated it, users must confirm and agree that:

1. you are authorised to access and store the Data;
2. your organisation has privacy and security controls in place in order to protect the privacy and security of the Data; and
3. you will take all reasonable steps to ensure that the Data will not be misused, interfered with, lost, modified or disclosed to unauthorised personnel.

ACCEPT

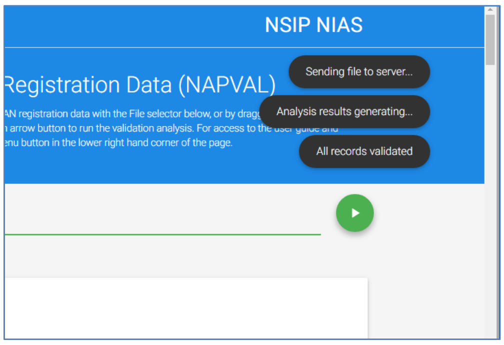

NSIP NIAS

Validate NAPLAN Registration Data (NAPVAL)

Select a CSV or XML file containing NAPLAN registration data with the File selector below, or by dragging file from your desktop onto the grey line. Press the green arrow button to run the validation analysis. For access to the user guide and resource links click on the floating blue menu button in the lower right hand corner of the page.

4. Select File and choose a file to be validated from the selection box and click Open, or drop the file in the input location. A sample file, students.csv, is included with the software distribution in the NAPVAL folder. NAPVAL validates files that are either CSV or XML file formats.

5. Click on the play button to commence validation.
6. Progress of the validation is displayed on screen. Do not click on the "Download Results as CSV File" link until all records are validated.



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Registration Data (NAPVAL)

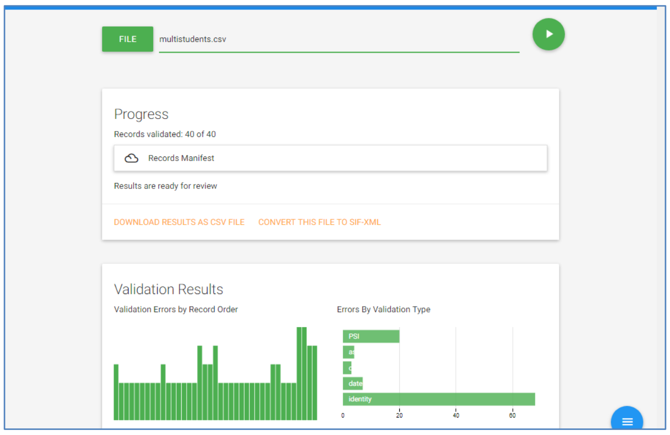
AN registration data with the File selector below, or by dragg
arrow button to run the validation analysis. For access to the user guide and
nu button in the lower right hand corner of the page.

Sending file to server...

Analysis results generating...

All records validated

7. NAPVAL performs an initial validation, then lists a summary of the first 100 validation issues on screen.
8. Once file processing is complete, a list of detailed validation results is displayed on screen, broken up into three areas:
   - Validation errors by record order (graph on left)
   - Errors by validation type (graph on right)
   - Error details table – Errors ordered by original file line number (table at bottom)



FILE multistudents.csv

Progress

Records validated: 40 of 40

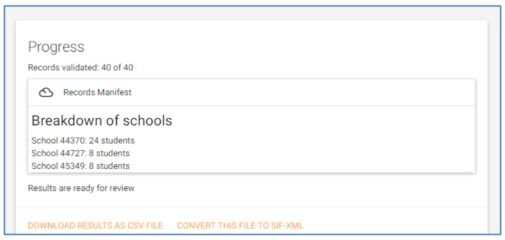
Records Manifest

Results are ready for review

DOWNLOAD RESULTS AS CSV FILE CONVERT THIS FILE TO SIF-XML

Validation Results

9. There is also a Records Manifest which when expanded will display the breakdown of students records per school. You can use the Manifest to confirm that the uploaded file contains the expected data.



Progress

Records validated: 40 of 40

Records Manifest

Breakdown of schools

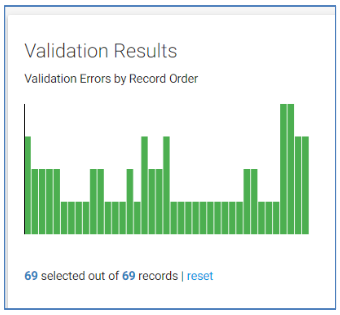
School 44370: 24 students
School 44727: 8 students
School 45349: 8 students

Results are ready for review

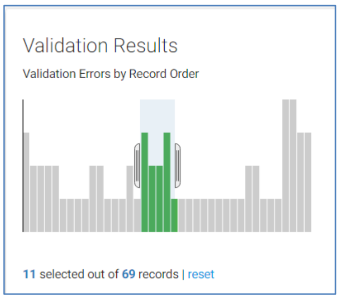
DOWNLOAD RESULTS AS CSV FILE CONVERT THIS FILE TO SIF-XML

10. To view more detail on the validation errors, use one of the following controls:
   - Validation errors by record order (graph on left) or
   - Errors by validation type (graph on right)

10.1 **Validation errors by record order**

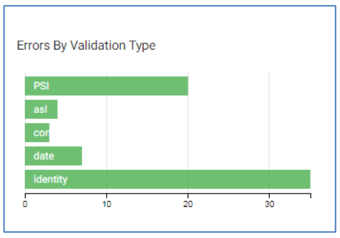

Validation Results
Validation Errors by Record Order
69 selected out of 69 records | reset

- This control allows a user the ability to narrow down the validation errors reported based on the record order.
- Move the mouse cursor over the column graph – a + symbol will appear. Drag this to select a section of the file (selected areas are green). Selecting a section will alter the errors by validation type data displayed and the details below in the errors ordered by original file line number table.
- As you move the selection window, the system updates the selection of errors displayed based on your selection.

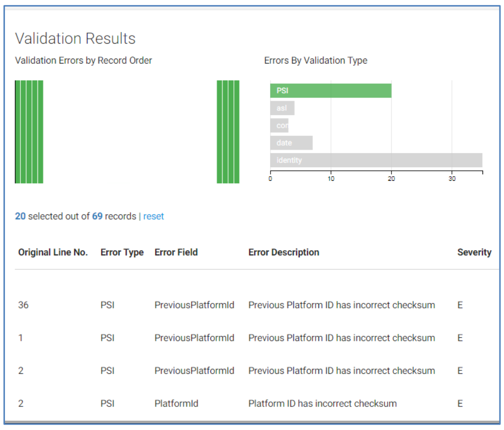

Validation Results
Validation Errors by Record Order
11 selected out of 69 records | reset

- To remove any filter on the errors reported, click on **reset.**

10.2 **Errors by validation type**



- This validation control allows the user to focus on a particular validation type (or types) by selecting the appropriate bar/s.
- For example, selecting PSI (= Platform Student Identifier) displays only the PSI-related errors in the detail table and record order graphs.

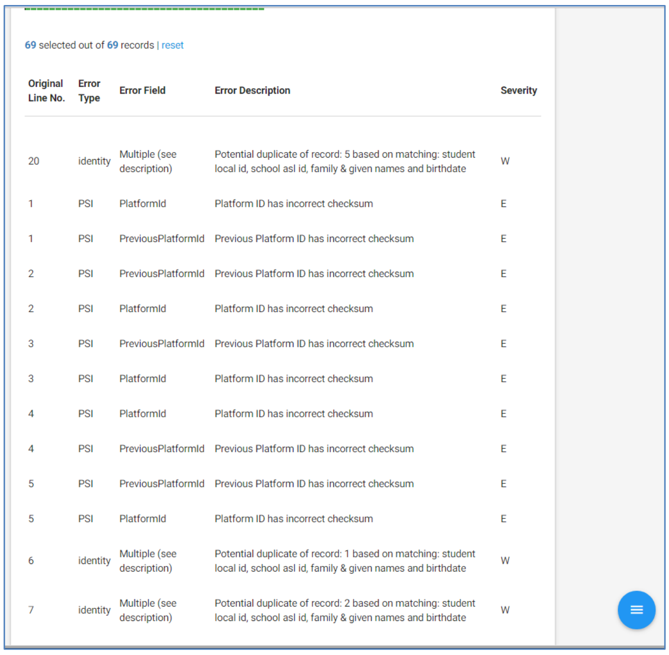


20 selected out of 69 records | reset

Original Line No.	Error Type	Error Field	Error Description	Severity
36	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
1	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
2	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
2	PSI	PlatformId	Platform ID has incorrect checksum	E

- You can select more than one validation type to combine results (highlighted in green) by clicking on multiple bars in the graph.

10.3 **Error details table – Errors ordered by original file line number**



69 selected out of 69 records | reset

Original Line No.	Error Type	Error Field	Error Description	Severity
20	identity	Multiple (see description)	Potential duplicate of record: 5 based on matching: student local id, school asl id, family & given names and birthdate	W
1	PSI	PlatformId	Platform ID has incorrect checksum	E
1	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
2	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
2	PSI	PlatformId	Platform ID has incorrect checksum	E
3	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
3	PSI	PlatformId	Platform ID has incorrect checksum	E
4	PSI	PlatformId	Platform ID has incorrect checksum	E
4	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
5	PSI	PreviousPlatformId	Previous Platform ID has incorrect checksum	E
5	PSI	PlatformId	Platform ID has incorrect checksum	E
6	identity	Multiple (see description)	Potential duplicate of record: 1 based on matching: student local id, school asl id, family & given names and birthdate	W
7	identity	Multiple (see description)	Potential duplicate of record: 2 based on matching: student local id, school asl id, family & given names and birthdate	W

- The Error details table displays validation errors detected in the imported file (you can filter it using the control graphs mentioned above).
- The table describes the original record number, the type (ASL = Australian Schools List validation, content, identity), the field where the error was detected, the error description, and the error severity (Warning or Error).

11. To export the produced error report, select Download Results as CSV File. You will be able to open or save the file as appropriate. Error reports use the naming convention of OriginalFileName_error_report.csv.
12. After you have reviewed and corrected errors in the source files, you can re-load a new version of the file for review. It is recommended that you refresh the browser if the NAPVAL validation screen is still active. Go back to File, select the revised file, then repeat the file upload steps as detailed above.
13. To end NAPVAL processing:
    - On Windows, run **stopnapval.bat** (which will close each terminal window) and close the web browser, or
    - Close each of the terminal windows by clicking the **x** in the top right corner of each window and close the web browser.
    - On Macintosh and Linux, run **stopnapval.sh** and close the web browser.

2.2 NIAS Components

NIAS contains a number of validation tools. These validation services can be accessed by setting variables in the napval.toml configuration file. When you open this file in a text editor, it should look something like this:

```
# Baseline year for DOB checks
TestYear = "2016"

# Validations to invoke
# ValidationRoute = ["schema", "local", "id", "dob", "asl"]
ValidationRoute = ["schema", "id", "dob", "asl"]

# Data match fields for matching across schools
StudentMatch = ["FamilyName", "GivenName", "BirthDate"]

# Legal characters for names. NOTE: this is the input to a regular
expression; if hyphens are permitted, leave - as the final character
LegalNameChars = "A-Za-z '-"

# Webserver port
WebServerPort = "1325"

# Number of validation engines
PoolSize = 4
```

Configurable variables

NIAS validation variable	Notes
TestYear	Sets the test year during which assessment is running. Used to ensure that students' birth dates align with their test levels.
ValidationRoute	Sets the validations to apply – see table below for details. Currently validations are not order-dependent.
StudentMatch	Fields of the student record to be used for data matching of records between schools during the *id* check.
LegalNameChars	Sets the legal characters for names. NOTE: this is the input to a regular expression; if hyphens are permitted, leave - as the final character LegalNameChars = "A-Za-z '-" Any instances of backslashes must be doubled, since

	backslashes are a special character in regular expressions: \\
WebServerPort	Sets the web server port. You can edit this if the default conflicts with another service.
NATSPort	Sets the port for the NATS streaming service (used as the bus for messages in the microservice architecture of the software). You can edit this if the default conflicts with another service.

Validation route values

NIAS validation variable	Notes
asl	Checks that ASL values are correct. Each release of NIAS updates the ASL values to the latest available copy from the Australian Schools List website, https://asl.acara.edu.au . (Note: ASL values can be updated by modifying values contained within the asl_schools.csv file contained within the napval/schoolslist folder)
schema	Applies the NAPLAN registration data set validations defined in schemas/core.json.
schema2	Applies dependency validation on NAPLAN registration data set, as defined in schemas/core_parent2.json : ensuring that if one parent 2 value is provided, all of them are provided.
dob	Apply date of birth validation according to the setting of TestYear.
Id	Apply id validation: confirm that every student has a unique LocalId per school, a unique PSI per school, and a unique LocalId, Family Name, Given Name, and Birth Date per school. (The fields used for the

	id check can be changed in configuration). Any collisions within a school are reported. It also detects any students with the same StudentMatch fields between schools.
psi	Apply PSI validation: verifies the check letter for each Platform Student Identifier in the file.
numericvalue	Validates all the numbers with value constraints in the file: currently this only applies to the FTE value, which the service confirms is a decimal number between 0 and 1.
namevalid	Validates student names to confirm that they do not contain extraneous characters, which may be rejected by the Assessment Platform. The legal characters for student names are set in the LegalNameChars configuration parameter, described above.
local	Applies any validations you have set in schemas/local.json. By default this file is not processed, and the default local.json file shipped with nias performs no validation. If you wish to use local validation, rename your local validation file to local.json (more details below).

2.3 NIAS Validation Schemas

Validation schemas (in JSON format) are used by NIAS to validate that the input files contain the required mandatory fields and contain valid values. NIAS comes with two validation schemas located in the **schemas** folder and an optional third local validation:

1. Core (*core.json)* – This is the validation schema based on the approved registration data set. It provides the core validation for mandatory/optional fields and valid values. Core validation is always applied when validating file contents. **Do not modify this file.**
2. Core, Parent 2 (*core_parent2.json*) - This is the validation schema expressing the dependencies between Parent 2 demographic values in registration data: If one such field is present, all of them need to be present. **Do not modify this file.**
3. Local (*local.json)*- This is an optional extra layer of validation which can be applied in addition to the core validation. You can edit this file to include local validations as required.

local.json

The file local.json can supply an optional extra layer of validation in addition to the validation found in core.json. Typical examples of where extra local validation may be useful include:

1. Making additional fields mandatory (for example a jurisdiction wide identifier)
2. Modifying allowed values (for example removing year level 0)
3. Modifying min/max lengths (for example all jurisdiction identifiers must be 9 characters in length)

The file local.json contains examples of possible local validations which users may seek to implement including a max length of 10 for home group, max length of 36 for jurisdiction id, and an absolute length of 8 for TAAId. It also lists TAAId, JurisdictionId and HomeGroup as mandatory fields.

A suitable JSON or text editor is recommended.

Enabling local schemas

NIAS users may seek to apply one or more localised schemas (for example SouthAustralia.json, SACatholics.json, SAIndependents.json).

To enable your own additional validation schema:

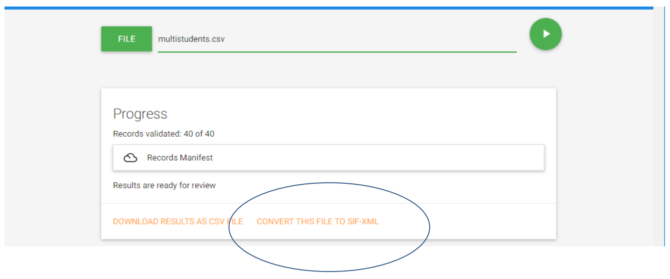
1. In the **napval\schemas** folder, rename local.json to defaultlocal.json
2. Rename your local validation file to local.json
3. Place it in the **schemas** folder
4. In the napval.toml file, uncomment the ValidationRoute with “local” included in the variable arguments, and comment out the default ValidationRoute.
5. Restart NAPVAL and validate your file/s.

Alternatively, you can implement your own validations by directly editing the default local.json file.

2.4 Conversion of CSV to XML

Once you are happy with the level of validation, you can convert CSV files to SIF XML format.

1. In the NAPVAL tool select File.
2. Choose the relevant CSV file (this file would typically be the file that has been worked on and validated as required). Select Open.
3. Click the 'Convert this file to XML' link,
4. Save the XML file to an appropriate location. The file will have the same filename as the CSV file but with an XML file extension.
5. You can convert files as many times as you require.


FILE
multistudents.csv
Progress
Records validated: 40 of 40
Records Manifest
Results are ready for review
DOWNLOAD RESULTS AS CSV FILE
CONVERT THIS FILE TO SIF-XML

Section 3 – Using NAPRRQL

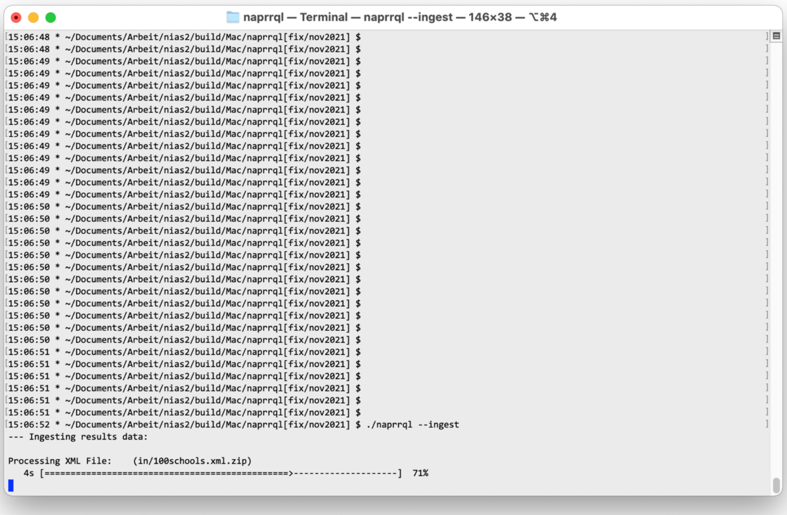
NAPRRQL comes with two full results reporting dataset sample extracts, one for 10 schools and 250 students (10schools.xml.zip), and one for 100 schools and 5000 students (100schools.xml.zip), which are ingested on first running the application. In order to run your own data received from the National Assessment Platform, substitute these files with your own zipped XML file; NAPRRQL will read any file suffixed **.xml.zip** in the **\in** folder. Please ensure that your own zipped XML file is not password-protected; you may need to unzip the password-protected file received from the national assessment platform, and re-zip it without a password.

When the application is run, data is streamed from the data file in the **\in** folder and processed onto the reporting sub-system. Report generators are then run to produce .csv extracts of the data in the **\out** folder. This contains aggregate reports at the top level for all report types (score summaries, domain scores, participation and code-frame).

By default, the reports are generated from the input RRD file with no grouping/break down. Optionally, NAPRRQL can also break down reports by school (named by ACARA Id), year level, domain, or any combination of the three. However this only applies to reports that can be meaningfully broken down in this way. Reports which do not break down in this way are ignored; that applies to the codeframe report, for example (`systemCodeframe.csv`), since it is not specific to a school, year level, or domain.

3.1 NAPRRQL Sample data

1. To run NAPRRQL and populate it from the sample file, navigate to the command prompt and to the naprrql folder (eg. C:\nias\naprrql).
2. Run **naprrql.exe -ingest** on Windows, **naprrql --ingest** on Linux and Macintosh. This launches the various components and services of NAPRRQL and begins processing of any data files in the **\in** folder.
3. The application ingests the data in readiness for generating reports in future steps. It displays a progress bar as it does so for each file.



```
15:06:48 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:48 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
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15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:52 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $ ./naprrql --ingest
--- Ingesting results data:

Processing XML File:    (in/100schools.xml.zip)
   4s [================================================>--------------------]  71%
```

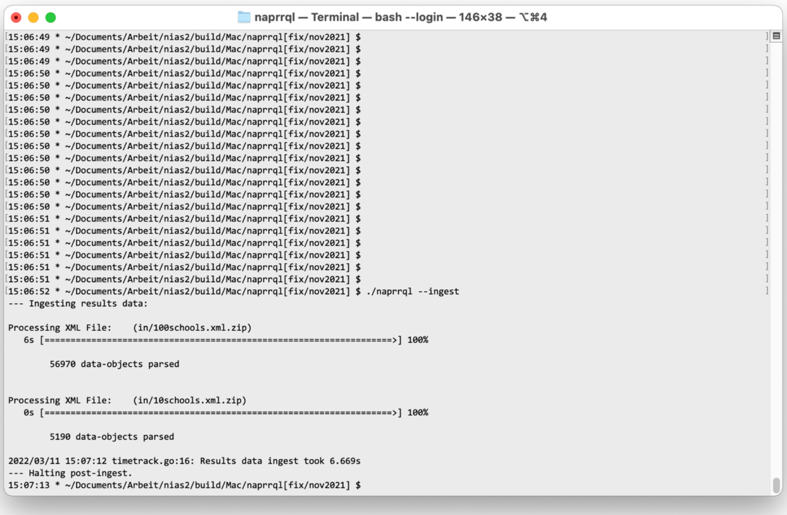

```
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:49 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
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15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
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15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
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15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:50 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:51 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
15:06:52 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $ ./naprrql --ingest
--- Ingesting results data:

Processing XML File:    (in/100schools.xml.zip)
   6s [====================================================================>] 100%

        56970 data-objects parsed


Processing XML File:    (in/10schools.xml.zip)
   0s [====================================================================>] 100%

        5190 data-objects parsed

2022/03/11 15:07:12 timetrack.go:16: Results data ingest took 6.669s
--- Halting post-ingest.
15:07:13 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $
```
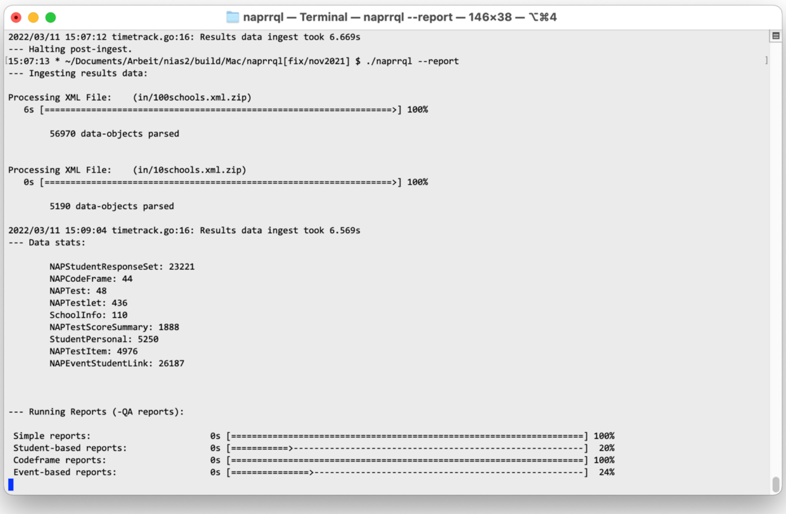

Once the ingest is complete, to generate NAPLAN Results Reports in .csv format, run **naprrql.exe -report** on Windows, **naprrql --report** on Linux and Macintosh. Note that this step will display progress bars for each type of report.



```
2022/03/11 15:07:12 timetrack.go:16: Results data ingest took 6.669s
--- Halting post-ingest.
15:07:13 * ~/Documents/Arbeit/nias2/build/Mac/naprrql[fix/nov2021] $ ./naprrql --report
--- Ingesting results data:

Processing XML File:    (in/100schools.xml.zip)
   6s [===================================================================>] 100%

        56970 data-objects parsed


Processing XML File:    (in/10schools.xml.zip)
   0s [===================================================================>] 100%

        5190 data-objects parsed

2022/03/11 15:09:04 timetrack.go:16: Results data ingest took 6.569s
--- Data stats:

        NAPStudentResponseSet: 23221
        NAPCodeFrame: 44
        NAPTest: 48
        NAPTestlet: 436
        SchoolInfo: 110
        NAPTestScoreSummary: 1888
        StudentPersonal: 5250
        NAPTestItem: 4976
        NAPEventStudentLink: 26187



--- Running Reports (-QA reports):

 Simple reports:                     0s [====================================================================] 100%
 Student-based reports:              0s [===========>--------------------------------------------------------]  20%
 Codeframe reports:                  0s [====================================================================] 100%
 Event-based reports:                0s [===============>----------------------------------------------------]  24%
```

4. This step will generate an **out** folder, which will contain a sub folder for system-reports. If you have enabled and configured the report splitter, this step will then generate an **out_split** folder. (This functionality is disabled by default.) The **out_split** folder will also contain a sub folder for system-reports, but that folder will contain sub folders of its own, broken down by school, year level, and/or domain. The reports generated in the **out** and **out_split** folders are detailed in sections 5.3 and 5.4 of this document.

   These reports are available as csv files by viewing them in the **out** folder (and the **out_split** folder, if enabled). The error messages that appear on screen during the generation of reports are replicated in the file **naprrql.log**.

3.2 Loading data files and generating reports

Important Note: Because the installation for NAPRRQL includes sample files for testing, it is important that these files are removed first prior to copying the relevant data files to the folders as described below.

The NAPRRQL will process any .xml.zip or .xml file it finds in the folder, which means it will process the sample file along with any files copied in. This also means that multiple files can be loaded into the **naprrql\in** folder and be processed at the one time. However, those files need to describe distinct students' results. If any XML objects in the files have the same RefIDs (global identifiers), NAPRRQL will no longer abort, as with previous versions of NAPRRQL; but it is no longer predictable which instance of the record will be saved to NIAS. Moreover, those objects will be double counted during ingest, so the progress bars will not give accurate values. That will happen for example if you have a zipped and unzipped instance of the RRD file in the same directory.

The sample files that must be <u>removed</u> are the files 10schools.xml.zip and 100schools.xml.zip contained in the folder: **\naprrql\in.**

Files and folders in the **\naprrql\out** folder will be deleted each time the NAPRRQL tool is run, so it is not necessary to delete sample data from here.

Please refer back to section 3.1 NAPRRQL Sample data for screenshots if required.

1. To run NAPRRQL and populate it using data from the National Assessment Platform, ensure your data file is in **.xml** format and zipped
2. Copy the file to the **naprrql\in** folder.
3. Navigate to the installation folder in a console or terminal and run **naprrql.exe -ingest** on Windows, **naprrql --ingest** on Linux and Macintosh. This launches the various components and services of NAPRRQL and begins processing of data files in the **\in** folder.
4. The application ingests the data in preparation for reporting. Note that the ingest process only needs to be done once unless the data changes.
5. Once the ingest is complete, to generate NAPLAN Results Reports in .csv format, run **naprrql.exe -report** on Windows, **naprrql --report** on Linux and Macintosh. The reports are divided up into sets which have attributes in common (one row per student, one row per test, one row per item), and run simultaneously. A set of progress bars will indicate how far NAPRRQL has gone in generating the reports: one progress bar for each set of reports.
6. Report generation involves all reports specified in the **config** directory as being activated. NAPRRQL since version 1.2.0 of NIAS (release late 2021) is substantially faster than its predecessors. Nonetheless, processing the file can take a long time; the result set for a jurisdiction will still likely take tens of minutes (though no longer hours), and should be run on a computer with the most memory available. (That is because the speed enhancement involves generating multiple reports simultaneously, which is memory dependent.)
7. Once the report generation is complete, to run the web interface for NAPLAN Results Reporting run **naprrql.exe** on Windows, **naprrql** on Linux and Macintosh. Alternatively, the csv files can be viewed in the **out** folder.
8. **Important: The window can be minimised but should not be closed whilst running NAPRRQL. Closing the window terminates that component of the NAPRRQL reporting tool.**

Note: To help speed the process up, you should disable any reports you will not be using. All reports are activated by default. To disable a report, change its corresponding configuration file in the **config** folder to read "`activated = false`" instead of "`activated = true`". The reports generated by NIAS are described in sections 5.3 and 5.4.

If you wish to read files from a folder other than **\in**, use the option **-inputFolder <folder>**; for example, **naprrql -ingest test** will read files from the folder **test** (inside the naprrql folder), instead of **in**.

By default, the **-report** option (and the other options to generate reports, **-qa**, -**itemprint**, -**writingextract**, **-allReports**) will rerun ingest, so strictly speaking the initial ingest is redundant (though it is useful to confirm that the RRD file is uncorrupted.) To skip rerunning ingest with those options, add the option **-skipIngest**.

Section 4 – Audit facility NAPLAN Registration

The NAPLAN Results Reporting data tool has a facility by which a NAPLAN Registration data file can be compared with an NAPLAN Online Results file to check for records which may be unique to each file. It compares a CSV file of Student Registration records (located in the **Napcomp\in\registration** folder) with the student records in the NAPLAN Online results XML file contained in the **Napcomp\in\results** folder, and detects which students appear only in one or the other file.

The comparison runs in two passes.

- First, records in the two files which have the same Platform Identifier (PSI) are eliminated. (For the comparison to run efficiently, users should endeavour to download from the Student Registration Management system a CSV file containing all student records, and includes their allocated PSIs.)
- Second, all remaining records from the two files are compared according to the fields they have in common, drawn from the following list: Family Name, Given Name, Middle Name, Local Id, PSI, ACARA ID of school, and birth date.
- Be careful to ensure that the birth date in the CSV file is represented in the same format as in the RRD file, as YYYY-MM-DD. If you edit the CSV file in Excel, Excel will tend to autoformat anything that looks like a date in the system default format, which is usually DD/MM/YYYY. The comparison will deem those two dates not to be the same.

4.1 Using the audit facility and generating Mismatches report

1. To run the NAPRRQL audit tool, copy the required registration data file (xxx.csv) into the folder: **napcomp\in\registration**
2. The Results (xxx.XML) file should be in the **napcomp\in\results** folder.
3. Navigate to the **napcomp** folder in a console or terminal and run **napcomp.exe**. This launches the various components and services of NAPRRQL and begins the comparison of the csv and xml files.
4. Once the comparison is complete, the mismatches are output to csv files in the **napcomp\out** folder.

- The file RegisteredButNotInResults.csv contains a listing of the students found to be unique to the NAPLAN Registration file (PSI, user-defined key, and RefId) but not in the Results and Reporting file
- The file ResultsButNotInRegister.csv contains a listing of all the student records unique to the Results & Reporting file, but not in the Student Registration Results.

Section 5 – NAPLAN Results Reporting

5.1 Reports: General

NIAS generates a number of reports from the results and reporting dataset. Reports are separated into four classes:

- QA reports, used to validate the integrity of the results and reporting dataset. (We do not expect these to be run outside of ESA.)
- Core reports, responding to TAA requirements for reporting at the level of students or test scripts.
- Item-Level reports, including either QA or Core reports at the level of individual item responses. These are generated separately, as they are much more time-consuming to run.
- Writing Extract reports, intended to enable the generation and validation of writing extracts.

Different command options are used to generate each class of report.

Each report has its own configuration file in the **config** directory. These files give the output file name for each report, the names of each field, and the corresponding internal field that is used to populate it. You normally would not be expected to edit this file, except that you can disable individual reports by setting `activated = false` within them.

5.2 QA Reports

1. Navigate to the **naprrql** folder (e.g. C:\NIAS\naprrql)
2. Run **naprrql.exe -qa** on Windows, **naprrql --qa** on Linux and Macintosh. This will generate the QA reports in addition to the normal reports described. This step performs the data ingest step by default; if you want to avoid doing that again, and have already run ingest, run NAPRRQL with the added option **-skipIngest**.
3. This launches the various components and services of NAPRRQL, creates a **qa** folder in the **out** folder and generates the files listed below. The distinction between reports filed under folder qa and reports filed under `qa\error_reports`, made in previous versions of NAPRRQL, is no longer made: all reports appear in the same folder.

	itemExpectedResponses.csv
Purpose	• Reports one row per student per test • Presently up to 4 Testlets per test • Lists the number of items per testlet that a student is expected to have answered (according to the codeframe), the number of correct/incorrect/not attempted and not presented items in that testlet; and any discrepancies between the number of items expected and referenced in the response • Accounts for any cases where all item responses in the testlet are missing. To highlight these the report injects a dummy "empty testlet report" item response into the testlet which is

	displayed in the report error. Any students with partial results in their PRD will be found.
What to expect	• A row per student response per test • At least one testlet per test populated
Look out for	• No items in the Not In Path category • Listings of discrepancies ("Expected Items Not Found, Found Items Not Expected") to be empty entries (",,") • Number of expected items per testlet to equal the correct/incorrect/not attempt/not presented items per testlet

	itemWritingPrinting.csv
Purpose	• Reports one row of response data per student per test item presented within a NAPLAN test for the Writing domain only • Detailed information which can be used for ingest into data analysis systems
What to expect	• Very large report • Includes a column for each subscore
Look out for	

	orphanEvents.csv
Purpose	• Reports any NAPStudentEvents whose corresponding school does not have a SchoolInfo object in the data set (no details have been provided about the school, or the school does not exist)
What to expect	• Ideally this report should be empty
Look out for	• Any entry in this report needs to be investigated

	orphanScoreSummaries.csv
Purpose	• Reports any score summaries whose corresponding school does not have a SchoolInfo object in the data set (no details have been provided about the school, or the school does not exist)
What to expect	• Ideally this report should be empty
Look out for	• Any entry in this report needs to be investigated

	orphanStudents.csv
Purpose	• Reports any students whose corresponding school does not have a SchoolInfo object in the data set (no details have been provided about the school, or the school does not exist)
What to expect	• Ideally this report should be empty
Look out for	• Any entry in this report needs to be investigated

	qaCodeframeCheck.csv
Purpose	• Reports all tests, testlets and items referenced in responses that are not included in the Codeframe

What to expect	• Ideally this report should be empty. • However, substitute items are not included in the Codeframe. They are listed in this report, under ItemSubstitutedForList: RefID gives the RefID of the item in the Codeframe that they are substitutes for
Look out for	• Tests / Testlets / TestItems should not be responded to if they are not part of the codeframe (with the exception of substitute items): any other entry in this report needs to be investigated

	qaSchools.csv
Purpose	• Reports one row per school, summary of school information as well as data from student registration information and results information • Includes total registered students and summary of student count by Year level • Includes total test attempts by test year level and domain • Includes counts of students by participation status • Includes count of disruptions • Includes normalised values for Sector (/SchoolInfo/SchoolSector), System (/SchoolInfo/System) and IndependentSchool (/SchoolInfo/IndependentSchool), as populated in the RRD file
What to expect	• All schools for the sector should be listed • Can check response counts against expected students registered per test year level
Look out for	• Discrepancies between number of students registered at each year level for each test domain; reasonable number of students exempt, absent, experiencing disruptions etc.

	qaSystemScoreSummaries.csv
Purpose	• Reports a row for every test score summary included in the data set, sorted by school, domain and year level
What to expect	• Use to check expected year levels • Writing may be included more than once, as score summaries are per test rather than test domain • Jurisdictions and National Averages were foreseen for these objects, but are not populated in the RRD, since they depend on TAA processing after the RRDs are finalised.
Look out for	• Any school without an entry for a domain–year level pair • That said, test score summaries are currently not being systematically included for all schools in the RRD, so this will return a large number of rows

	qasystemCodeframe.csv
Purpose	• Reports all Items against Testlets and Tests in the Codeframe • Includes Item difficulty, correct answer, item type

	• Detailed information which can be used for ingest into data analysis systems
What to expect	• Large report • One row for every Item in Codeframe
Look out for	

	systemExtraneousCharactersStudents.csv
Purpose	• Reports a row for every student whose name contains a character other than a letter, an apostrophe, a hyphen, or space
What to expect	• Ideally this report should be empty
Look out for	• Check for any students whose names may cause SSSR report to crash

	systemGuidCheck.csv
Purpose	• Reports any GUID that references the wrong kind of object, or doesn't reference any object included in the data set
What to expect	• Ideally this report should be empty
Look out for	• If any data appears, report will show the correct kind of object the GUID should point to. Any entry in this report needs to be investigated.

	systemMissingTestlets.csv
Purpose	• Reports a row for every student response set with a participation status of P, which contain less testlets (according to the ParallelTest field of the student response set object) than are expected for the given test level and test domain. (For 2022, these are: three for Reading, Spelling, and Grammar & Punctuation; three for Numeracy Yrs 3 and 5; four for Numeracy Yrs 7 and 9; one for Writing.)
What to expect	• Ideally this report should be empty
Look out for	• Check for any students that have not been presented the full count of testlets expected. Check the test disruptions and total lapsed time for the test event, as potential explanations.

	systemObjectFrequency.csv
Purpose	• Reports for every student the number of NAP Event Student Link objects (= test events) they have recorded; the number of events with participation status P/R/S (Participated/Refused/Sanctioned Abandonment)—which are the events that have corresponding responses in the RRD; and the number of responses • Also includes P/R/S events without responses, and responses without P/R/S events
What to expect	• A row for every unique student in the data set, independent of school. No P/R/S events without responses, and no responses without P/R/S events.

Look out for	• Check for discrepancies the number of events with participation status P/R/S and the number of responses • Check for any instances of a student participating in more than five distinct events (as identified by test level plus test domain)

	systemParticipationCodeImpacts.csv
Purpose	• Reports tests for which the response contents are unexpected based on the participation code
What to expect	• Ideally this report should be empty
Look out for	• “Adaptive pathway without student undertaking test” if: ○ participation code = S, P, F ○ PathTakenForDomain or ParallelTest are not empty • “Scored test with status other than P, F or R” if: ○ participation code ≠ P, F, R ○ RawScore or ScaledScore is not empty • “Non-zero score with status of R” if: ○ participation code = R ○ RawScore is not empty ○ RawScore ≠ 0 • “Unscored test with status of P, F or R” ○ participation code = P, F, R ○ RawScore or ScaledScore is empty

	systemParticipationCodeItemImpacts.csv
Purpose	• Reports items for which the item responses are unexpected based on the participation code, focusing on score at test level, testlet level and item level.
What to expect	• Ideally this report should be empty. This report does NOT track normal outcomes such as sanctioned abandonments; it tracks what should be bugs in the output, such as item responses being scored when a student refused to participate.
Look out for	• “Response captured without student writing test” if: ○ participation code ≠ S, P, or F (in Writing) ○ Response is present • Scored test with status other than P, F (in Writing) or R if: ○ participation code ≠ P, F (in Writing), R ○ TestletScore, ItemScore or Subscores are not empty • Non-zero Scored test with status of R if: ○ Participation code = R ○ TestletScore, ItemScore or Subscores is not empty ○ TestletScore, ItemScore or Subscores ≠ 0 • Unscored test with status of P, F (in Writing) or R ○ Participation code = P, F (in Writing), R ○ ItemScore is empty • Unscored writing test with status of P, F ○ ParticipationCode = P, F ○ TestDomain = Writing ○ Subscore is empty

	systemResponses.csv
Purpose	• Reports one row for every student per school registered for a test domain, along with information on their response if available • Includes participation code, path taken for domain and raw score • Detailed information which can be used for ingest into data analysis systems
What to expect	• Very large report • Will include a row for every student registration for all tests, but not all rows will contain responses
Look out for	—

	systemRubricSubscoreMatches.csv
Purpose	• Reports item/response pairs in which the rubric types and subscore types do not match. NIAS relies on the rubric types being specified in configuration; if the rubric types have been updated, or if the rubric types do not match the RRD reports on subscores, this report alerts us to the mismatch, and will require an update of the NIAS config file to be circulated.
What to expect	• Ideally this report should be empty
Look out for	• Where there are Expected Rubrics Not Used, which are subscores that do not include a rubric in the list of 10 expected rubric names • Where there are Used Rubrics Not Expected, which are subscores with rubrics that are not in the list of 10 expected rubric names • Where there are Subscores Not Defined, which are subscores with no corresponding rubric • Where there are Rubrics Not Scored, which are rubrics with no corresponding subscore in the item response

	systemStudentEventAcaraIdDiscrepancies.csv
Purpose	• Reports a row for every test administered at a different school from where the student was enrolled
What to expect	• Ideally this report should be empty
Look out for	• Check for any students whose school of enrolment and school administering the test conflict. If a student has been registered against two schools, the first school of registration will be used as the control.

	systemTestAttempts.csv
Purpose	• Reports all sanctioned abandonments for students in schools for sector
What to expect	• Small number of rows

Look out for	

	systemTestCompleteness.csv
Purpose	• Reports for each test per year level per school in sector counts for Present and Sanctioned Abandonment, and discrepancies between attempts (events with status P or R) and responses
What to expect	• Row per school per domain per test level
Look out for	• List of attempts with no response for all rows should include only Writing Alternate Format test events • List of responses with no attempts should be empty for all rows • P_Attempts + S_Attempts + R_Attempts should add up to Responses

	systemTestIncidents.csv
Purpose	• Reports all non-empty test disruptions by student, school and domain
What to expect	• Small number of rows for disruptions impacting individual students • Larger number of rows for disruptions impacting cohort of students
Look out for	• Schools with high proportion of disruption

	systemTestTypeImpacts.csv
Purpose	• Reports tests for which the response contents are unexpected based on the test domain
What to expect	• Ideally this report should be empty
Look out for	• “Writing test with adaptive structure” if ○ TestDomain = Writing ○ PathTakenForDomain or ParallelTest is not empty • “Non-Writing test with non-adaptive structure” if ○ TestDomain ≠ Writing ○ PathTakenForDomain or ParallelTest is empty

	systemTestTypeItemImpacts.csv
Purpose	• Reports items for which the item responses are unexpected based on the test domain, focusing on score at test level, testlet level and item level
What to expect	• Ideally this report should be empty
Look out for	• “No subscores for Writing Test” if ○ TestDomain = Writing ○ Subscores is empty • Subscores for non-writing test if ○ TestDomain ≠ Writing ○ Subscores is not empty

	systemStudentTestYearLevelDiscrepancies.csv
Purpose	• Reports a row for every test administered at a different test level from the year level that the student was enrolled in
What to expect	• Ideally this report should be empty
Look out for	• Check for any students whose year level conflicts with the test level they were administered.

	qa/qaStudentResultsCheck.csv
Purpose	• Reports the number of times an item appears in a test response that is not anticipated in the codeframe
What to expect	• This report should be empty
Look out for	• Any rows present in the report should be investigated, as they point to a discrepancy in structure between the codeframe and the administration of test items

	qa/systemItemCounts.csv
Purpose	• Reports the number of times an item is in a response at all
What to expect	• A row for every item in the codeframe
Look out for	• High counts for substitute items • Zero counts for any item

5.3 System Reports

The following are core reports extracted from the RRD file, generated in the `system_reports` folder as a result of using the **-report** option in NIAS. As with QA reports, if you want to avoid reingesting the RRD file, add the **`-skipingest`** option.

In the following,

- reports prefixed with act are specific to ACT,
- reports prefixed with nsw are specific to NSW,
- reports prefixed with qcec are specific to the QCEC,
- reports prefixed with qcaa and qld are specific to the QCAA,
- reports prefixed with sa are specific to South Australia.
- Reports specific to a jurisdiction are coloured in orange.

	actSystemDomainScores.csv
Purpose	• Reports raw and scaled scores for each student, as well as proficiency level, year level, domain, parallel path, and participation
What to expect	• One row per student per test domain
Look out for	Proficiency level (updated in 2023)

	compareItemWriting.csv
Purpose	• Used to compare successive writing extract instances (using **csvdiff** mode) • Reports student identifiers, participation code, word count, start time, and item response
What to expect	• One row per student for each student that has done a writing test in the current writing extract.

Look out for	• Participation statuses that have changed from P between extracts: any such participation statuses indicate students whose results need to be re-marked. • Any changes in word count or text of writing responses.

compareRRDtests.csv	
Purpose	• Used to compare overall status of NAPLAN testing over successive RRD generations (using **csvdiff** mode) • Reports student identifiers, test IDs, participation code, start time, and parallel paths
What to expect	• One row per student for each student for each test registered against in the current RRD generation.
Look out for	• Any changes in participation statuses or parallel paths between instances.

isrPrinting.csv	
Purpose	• Reports for student including local ID (labelled EDID in the current report for legacy reasons), name, scores for each domain, mean scores • Can be used to facilitate merge with paper records to support printing of hardcopy ISRs.
What to expect	• A record for each student
Look out for	

isrPrintingExpanded	
Purpose	• Reports for student including local ID, name, and, for each domain: scaled scores for the student, scaled score standard deviations for the student, mean scores (across the school), pathways for test responses, and full demographic information for each student. Report produced at the request of CEO WA. • Can be used to facilitate merge with paper records to support printing of hardcopy ISRs.
What to expect	• A record for each student
Look out for	

nswItemDescriptors.csv	
Purpose	• Reports the item descriptor for each test item included in the RRD, including substitute items.
What to expect	
Look out for	

nswPrint.csv	
Purpose	• Reports the domain scores, participation status, and DAC/PNP codes for each test sat by a student, following NSW TAA format requirements

What to expect	• A record for each student, including all test domain scores and paths • The TAAId is sourced from StudentPersonal.OtherIdList.OtherId.#[Type==JurisdictionId]
Look out for	

	nswWritingPearsonY3.csv
Purpose	• Output the writing results of year 3 students, following the fixed-width format prescribed by Pearson for processing.
What to expect	• A record for each student, with fixed width fields rather than comma-delimited fields. These reports have no header row.
Look out for	• There should be no writing results included in the report, since none are present in the RRD file: the file is to be used as a template to be populated by merging the writing results in, out of band.

	nswWritingPearsonY5.csv
Purpose	• Output the writing results of year 5 students, following the fixed-width format prescribed by Pearson for processing
What to expect	• A record for each student, with fixed width fields rather than comma-delimited fields.
Look out for	• There should be no writing results included in the report, since none are present in the RRD file: the file is to be used as a template to be populated by merging the writing results in, out of band.

	nswWritingPearsonY7.csv
Purpose	• Output the writing results of year 7 students, following the fixed-width format prescribed by Pearson for processing
What to expect	• A record for each student, with fixed width fields rather than comma-delimited fields.
Look out for	• There should be no writing results included in the report, since none are present in the RRD file: the file is to be used as a template to be populated by merging the writing results in, out of band.

	nswWritingPearsonY9.csv
Purpose	• Output the writing results of year 9 students, following the fixed-width format prescribed by Pearson for processing
What to expect	• A record for each student, with fixed width fields rather than comma-delimited fields.
Look out for	• There should be no writing results included in the report, since none are present in the RRD file: the file is to be used as a template to be populated by merging the writing results in, out of band.

	qcaa_napo_event_student_link.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each NAPEventStudentLink object
Look out for	

	qcaa_napo_items.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each NAPTestItem object
Look out for	

	qcaa_napo_schools.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each SchoolInfo object
Look out for	

	qcaa_napo_student_response_set.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each NAPStudentReponseSet (the top level scoring information)
Look out for	

	qcaa_napo_students.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each StudentPersonal object • ID = StudentPersonal.OtherIdList.OtherId.#[Type==TAAStudentId] • STUDENT_ID = StudentPersonal.OtherIdList.OtherId.#[Type==SectorStudentId]
Look out for	

	qcaa_napo_testlet_items.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each mapping of a testlet to a test item in NAPTestlet
Look out for	

	qcaa_napo_testlets.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each NAPTestlet object
Look out for	

	qcaa_napo_tests.csv
Purpose	• Export RRD to QCAA database table

What to expect	• One row for each NAPTest object
Look out for	

	qcaa_napo_writing_rubric.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each subscore received against a rubric in a NAPStudentResponseSet object for writing
Look out for	

	qcaa_test_score_summary.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each NAPTestScoreSummary object
Look out for	

	qldStudent.csv
Purpose	• Basic registration information for each student by school in TAA, following QLD TAA format requirements • StudentID = StudentPersonal.OtherIdList.OtherId.#[Type==TAAStudentId] • EQID = StudentPersonal.OtherIdList.OtherId.#[Type==SectorStudentId]
What to expect	
Look out for	

	qldStudentScore.csv
Purpose	• Reports Student ID Domain, Year level, raw and Scaled scores, Band Participation status for each student, following QLD TAA format requirements
What to expect	
Look out for	

	qldTestData.csv
Purpose	• Reports item information per year level and domain, includes sequence and item type, following QLD TAA format requirements
What to expect	
Look out for	

	saHomeschooledTests.csv
Purpose	• Reports on test attempt status for home schooled students
What to expect	• A record for each student, including test attempt status and Reporting school details.
Look out for	

	studentProficiency.csv
Purpose	• Reports student proficiency levels reached for each test.
What to expect	• A record for each test result, with demographic information for the student, and proficiency values.
Look out for	• The proficiency values will only be populated alongside the scaled scores, in the final release of the RRD, and should be drawn from a very limited set of values.

	systemCodeframe.csv
Purpose	• Reports for each year level and domain, Testlet information including Name, Location, Node, Maximum Score and Items, including difficulty Maximum score, difficulty and Item Type
What to expect	
Look out for	

	systemDomainScores.csv
Purpose	• Reports raw and scaled scores for each student, year level and domain
What to expect	• One row per student per test domain
Look out for	

	systemObjectsCount.csv
Purpose	• Summary report showing counts for: schools, students, test events, student responses, tests, testlets, test items, codeframes & score summaries
What to expect	
Look out for	

	systemPNPEvents.csv
Purpose	• Reports on all students with at least one PNP (DAC) code for an event.
What to expect	• One row for each test event which has at least one associated PNP code.
Look out for	

	systemParticipation.csv
Purpose	• Reports participation codes for each student in each school by domain
What to expect	
Look out for	

	systemSchools.csv
Purpose	• Reports school registration details, including school type, sector, principal name and websites

What to expect	
Look out for	• Student count will only be populated if it has been submitted in Registration

	systemScoreSummaries.csv
Purpose	• Reports for each school the data in NAPTestScoreSummary, including the Test ID and (if available in the RRD) averages for School, Jurisdiction and National
What to expect	• Jurisdictions and National Averages were foreseen for these objects, but are not populated in the RRD, since they depend on TAA processing after the RRDs are finalised.
Look out for	• Writing may be included more than once, as score summaries are per test rather than test domain • Any school without an entry for a domain–year level pair • That said, test score summaries are currently not being systematically included for all schools in the RRD, so this will return a large number of rows

5.4 Split Reports

By default, NAPRRQL generates only reports covering the entirety of the data it has ingested. However, NAPRRQL also has functionality that can break down reports according to school, domain, and/or year level, according to how it is configured, and output to a separate folder (by default **out_split**). This functionality replaces the **out\school_reports** reports generated in previous versions of NAPRRQL, which only allowed breakdown according to school.

In order to ensure that reports are broken down, edit the file **config_split\config.toml**, to read `Enabled = true` under the `[Splitting]` heading, instead of `Enabled = false`. The line `Schema = ["School", "YrLevel", "Domain"]` indicates that, wherever possible, reports will be broken down by all three of School, Year Level, and Domain: so any one report file in the broken down version will only contain results applicable to a single school, a single year level, and a single domain. Reports will be filed in a subfolder relevant to its contents. (For example, the subfolder **out_split\21212\3\Numeracy** will contain reports that include only results for Year 3 Numeracy tests in the school with ACARA ID 21212.) If you require fewer levels of breakdown, remove one or two of the options.

If a report cannot be broken down by domain, because it contains columns relating to multiple domains, its domain folder will be named `AllDomains`.

Splitting functionality only applies to those reports whose configuration file (under `config`) includes as its first three fields `"School" = "CalculatedFields.SchoolId"`, `"YrLevel" = "CalculatedFields.YrLevel"`, and `"Domain" = "CalculatedFields.Domain"`. If the config file does not have those fields at the start, it cannot be processed by the report splitter, and it will be ignored. For example, the report configuration file `config\ActSystemDomainScores.toml` does include those fields, so `system_reports\ActSystemDomainScores.csv` can be split. The report configuration file `config\SystemCodeframe.toml` does include those fields, so `system_reports\SystemCodeframe.csv` cannot be split.

5.5 Item Level Reports

Certain reports have one row for each item response of a student, rather than one row per student or per test script. This makes those reports much larger and much more time consuming to generate. For that reason, they are only optionally generated.

To generate item level reports, run **naprrql.exe -itemprint** on Windows, **naprrql --itemprint** on Linux and Macintosh. This generates report corresponding to all individual item responses for all domains. If you run **naprrql.exe -allReports** on Windows, **naprrql --allReports** on Linux and Macintosh, all reports will be generated, incorporating item level reports as well as QA and core reports.

This creates the following reports under the **out** folder.

	system_reports/nswAllPearsonY3.csv
Purpose	• Output all results of year 3 students, following the fixed-width format prescribed by Pearson for processing.
What to expect	• A record for each student, covering all responses in all tests the student has sat, with fixed width fields rather than comma-delimited fields.
Look out for	• Students enrolled in Writing but not Numeracy. • Scores for individual items add up correctly.

	system_reports/nswAllPearsonY5.csv
Purpose	• Output all results of year 5 students, following the fixed-width format prescribed by Pearson for processing
What to expect	• A record for each student, covering all responses in all tests the student has sat, with fixed width fields rather than comma-delimited fields.
Look out for	• Scores for individual items add up correctly.

	system_reports/nswAllPearsonY7.csv
Purpose	• Output all results of year 7 students, following the fixed-width format prescribed by Pearson for processing
What to expect	• A record for each student, covering all responses in all tests the student has sat, with fixed width fields rather than comma-delimited fields.
Look out for	• Scores for individual items add up correctly.

	system_reports/nswAllPearsonY9.csv
Purpose	• Output all results of year 9 students, following the fixed-width format prescribed by Pearson for processing
What to expect	• A record for each student, covering all responses in all tests the student has sat, with fixed width fields rather than comma-delimited fields.
Look out for	• Scores for individual items add up correctly.

	item_printing/itemResults.csv
Purpose	• Reports one row of response data per student per test item presented within a NAPLAN test • Detailed information which can be used for ingest into data analysis systems
What to expect	• Very large report • This report excludes writing
Look out for	

	item_printing/nswItemPrinting.csv
Purpose	• Reports item responses for each item responded to, against the student PSI, following NSW TAA format requirements
What to expect	• A record for each item response
Look out for	

	item_printing/qcaa_napo_student_responses.csv
Purpose	• Export RRD to QCAA database table
What to expect	• One row for each individual student item response contained in NAPStudentReponseSet
Look out for	

	item_printing/PrintAll.csv
Purpose	• Reports all item responses for all tests sat by a student, following NSW TAA and QCEC format requirements
What to expect	• A record for each student, including all item responses in all tests
Look out for	• Very large number of columns: the report has a fixed number of columns, and allows 30 items per testlet, with 3 testlets per test (4 for Yr 7 and 9 Numeracy).

NOTE: the items responses are output in the order they occur in the RRD XML. This is not necessarily the same order as the corresponding items occur in the testlet in the codeframe; that needs to be recovered explicitly as the ItemResponse.SequenceNumber. Moreover, items are substituted for other items. As a result, a column in an item response report will not report responses against the same item throughout, and responses need to be collated against items separately if that is required.

5.6 XML

Note: This functionality generates modified RRD XML file/s and it is recommended to be used only after reading the below guidance.

This function is used to re-extract redacted xml from the Results and Reporting dataset as both a single file per ingest (typically a single RRD) AND a separate XML file per school (based on ACARAID).

The supplied default `naprrql.toml` file by default redacts the following values:

- Student Item Response
- Item Correct Answer

for all tests except Writing set.

Run **naprrql.exe -xml** on Windows, **naprrql --xml** on Linux and Macintosh.

naprrql --xml: Outputs all ingested NAPRR records in XML format. This outputs a single file for the entire sector, as `out\redacted_xml\sif.xml`.

It is possible to output the XML as one file per school, as well as one file for the entire sector ingested. To do so, enable the report `XMLPerSchoolOutput`, by setting `activated = true` in the file `\config\XMLPerSchoolOutput.toml` . (The per-school set of XML reports is disabled by default.) The content of the generated files is identical to that of the single file for the entire sector. The results will be output in the same format as for the NAPLAN API, and can be used to emulate it:

- One file per school, `schooldata-{GUID}.xml`, containing NAPEventStudentLink, NAPStudentResponseSet, NAPTestScoreSummary, StudentPersonal.
- One file containing all SchoolInfo objects, `schoollist.xml` ; this is used to look up the GUIDs for the `schooldata-{GUID}.xml` files.
- One file containing all codeframe objects, `testdata.xml` : NAPCodeframe, NAPTest, NAPTestlet, NAPTestItem,

IMPORTANT: If you want the XML output to reflect the full contents of the input XML file, you *must* remove all entries from the XMLFilter element in the **naprrql.toml** file (the supplied **naprrql.toml** file contains entries to demonstrate the redaction functionality).

The XML follows the SIF/XML schema just like the output of the National Assessment Platform. In particular, elements are redacted by setting their `xsi:nil` attribute to `true`, rather than removing the element from the file. **However it has the following differences**:

- All multi-object files are wrapped with the single tag `<sif>`, as is done for the NAPLAN API. There are no more specific container elements, such as `StudentPersonals` or `NAPTests` (although the container elements are not used consistently in the source XML anyway). (Such container elements have not been generated by the National Assessment Platform as of 2019.)
- Empty elements like `<StateProvince/>` will have space inserted between the tag name and the `/>`.

- If an element in the source file is already marked as redacted or missing, by setting its `xsi:nil` attribute to `true` (e.g. `<GridLocation xsi:nil="true" />`), it will simply be left out of the XML output.
- Objects will not necessarily occur in the same sequence in the output file as they do in the source file.

You can set elements to be redacted in the XMLFilter element in the **naprrql.toml** file. The XMLFilter element is an array of paths of elements to be redacted, in XPath notation; e.g. `/NAPTest/TestContent/DomainBands/Band1Upper`, `/NAPTestlet/TestItemList/TestItem[1]/TestItemLocalId`. All paths should be prefixed with `/`followed by the filtered object name.

We have provided some sample values in the **naprrql.toml** provided with the downloaded program.

IMPORTANT: If you want the XML output to reflect the full contents of the input XML file, you *must* remove all entries from the XMLFilter element in the **naprrql.toml** file. The supplied **naprrql.toml** file contains entries to demonstrate the redaction functionality, including two sample redaction sets (the second is commented out).

Section 6 Support

6.1 Support

For any support of NIAS, please raise a ticket on the NAPLAN JIRA that you will have been granted access to as a TAA.

To be notified of updates to the NIAS tools, subscribe to notifications on github: https://github.com/nsip/nias2/releases