# CIM Identities Web Services Test Cases

This program comes with two different clients, a desktop and web browser version. Despite similar appearances, test cases will be presented for both versions. The web browser version is more robust and could be easily modified to add other functionality if needed by the developer, while the desktop version would require more effort to make changes due to the IDE-specific code used to build it.

## CIMIdentitiesJSP

CIMIdentitiesJSP is a JSP (Java Server Page) meant to be viewed in a web browser. This version was tested in Chrome Version 60.0.3112.90. Appearance and functionality of the program may vary across web browsers.



*Figure 1: Home page of the CIMIdentitiesJSP service, built using Bootstrap template provided by w3schools*

The "Enter Data" page provides the user the ability to insert, modify, or delete data within the CIMIdentities database.

## Insert

The CIMIdentities.xsd describes a minimum occurrence of 0 for every data field, so theoretically a blank entry could be inserted (it would be given a UUID, however).  In practice, a name combined with a Name Type name is what gives a CIM Identity its true uniqueness rather than the UUID, so the min occurrence would be changed to 1 and the code would need to be modified appropriately by not allowing null/empty string values.

### 1)  Inserting Blank Data



*Figure 2:  Although blank data should never be inserted, the database is initially setup so that only the UUID makes it unique.  A more practical example using the CIM standard would have at a minimum the Name and NameType Name*

## 2) Inserting a Regular Entry



*Figure 3: Here we see a full data entry. Although it's selectable, the "Enter UUID" field does not allow manual entry of a UUID, as UUID assignments are handled by the server.*

**Note: The drop boxes are for easily assigning common entries such as "Meter Reading" or the name of a utility under Name Type Authority. All existing entries in the database are added to the dropboxes upon page reload, though the code easily be rewritten to allow asynchronous updates instead.**

## Modify

When modifying an entry, the UUID is required to know which entry to change.  When providing the UUID in the "Enter UUID" text box, the corresponding fields should automatically be populated if it's a valid entry.  Change whichever fields need to be modified, click "Save" and a message will pop up displaying the old data followed by the new data replacing it.

1) **Modifying an Existing Entry**



*Figure 4: A UUID is copy/pasted into the "Enter UUID" box.  If the UUID exists, the information will automatically be populated and desired changes can be made before selecting "Save".*

*Figure 5: The description has been modified for both "Name Type" and "Name Type Authority" and a confirmation message is printed on screen. Note: If "Insert" is selected, a new entry will be made in the database.*

## 2) Incorrectly Entering UUID



*Figure 6: If UUID is incorrectly entered (note the first character being a '9' instead of '7' here), then an error message should pop up informing the user of the error and making no changes to the "intended" entry.*

## Delete

Delete behaves similarly to modify, filling in all of the object's fields for verification purposes. All that's necessary is the UUID of the object to be deleted.

### 1) Attempting to Delete With Incorrect UUID



*Figure 7: Similar to "modify", an error message will pop up if the user tries to delete an entry using the incorrect UUID.*

## 2) Proper Entry Deletion



*Figure 8: Correct entry deletion. A message will pop up informing the user of what was deleted. If it were deleted by mistake, the entry could be re-added with a different UUID.*

## View Database

The "View Database" tab is meant to provide a look at all current entries in the database. It is automatically sorted alphabetically by name, and can be sorted by the other fields by clicking the column header. By default it displays 10 entries and can be set to show as many as 1000. This value can be modified easily within the code if desired.

### 1) Sort the Table By Clicking the Column of Desired Sorting. Click a Second Time to Reverse Sort.

# CIM Database Entries

| entry | UUID | Name | NameType Name | NameType Description | NameTypeAuthority Name | NameTypeAuthority Description |
|---|---|---|---|---|---|---|
| 1 | bd4825e3-2a4f-42af-9534-733410d292b8 | | | | | |
| 2 | 7a8d8745-34bc-4718-8260-70183aacfb0f | A New Entry | Meter Reading | Meter Entry Description | KUB | Knoxville Utilities Board |
| 3 | 1e6ee4fa-1e47-4a09-80d4-916129d11f76 | A Test 0 | HRIS, Sr Analyst | None | test | Tennessee Valley Authority |
| 4 | ad2a4697-e6b5-4071-9ea9-831d9e09855e | A Test 01 | Composite Switch | Company Executive Officer | TVA | nameTest |
| 5 | 18a12cfa-532a-456b-b587-58950d2e1204 | A Test 01 | Composite Switch | Company Executive Officer | TVA | nameTest |
| 6 | 2909aa29-b835-4e59-bfc1-561393fe391b | A Test 032 | CEO | Generic Description | test | SOAP Test3 |
| 7 | da3cd262-1ce9-49d7-b49c-679a8b887167 | A Test 041 | Composite Switch | Casts spells | Test3 | Test4 |

*Figure 9:  Sorted by "Name" in alphabetical order.*

# CIM Database Entries

| entry | UUID | Name | NameType Name | NameType Description | NameTypeAuthority Name | NameTypeAuthority Description |
|---|---|---|---|---|---|---|
| 94 | 1fee7d08-9077-45c9-bfb1-a5d23f6cde06 | Test UUID | Test NameType Name | Test NameType Description | Test NTA Name | Test NTA Description |
| 92 | 6b64eb6e-8265-43a0-90b9-31e7e2e1d053 | Test Name | Test NameType Name | Test NameType Description | Test NTA Name | Test NTA Description |
| 93 | 8a1e8a70-0b56-449e-aeaa-9ef2cbde77ed | Test Name | Test NameType Name | | Test_name NTA | |
| 88 | 704f338c-65b5-4db6-8e62-aa23e1f04f32 | test | test | test | test | test |
| 89 | dfe21a7b-a374-452a-8669-3a1ce87b2603 | test | test | v | test | test |
| 90 | 4b1dc672-5332-4086-a358-e1e07a7b5a18 | test | test | test | test | test |
| 91 | cb72ec25-e993-4e05-a6d7-67d3c601b479 | Test | Test1 | Test2 | Test3 | Test4 |
| 87 | 94cd8d83-6fc7-4bdb-93c3-f81ec37fb1c0 | t | | | | |
| 86 | 096835c1-64bc-4c19-a606-61d8c6b23a9e | SQA Test | NT Name | NT Des | NTA Name | NTA Des |
| 85 | da3dbfe3-f952-4acb-912b-7ff3e2201a0e | SOAP Test4 | SOAP Test4 | SOAP Test4 | SOAP Test4 | SOAP Test4 |
| 84 | b62f9afa-712d-498b-a0d3-30ed2122788e | SOAP Test3 | SOAP Test3 | SOAP Test3 | SOAP Test3 | SOAP Test3 |
| | b313ba65-a7ac-4e32-b872- | | | | | |

*Figure 10: Reverse sorted by name.*

**2)   Change the Number of Entries on Screen**

# CIM Database Entries

| entry | UUID | Name | NameType Name | NameType Description | NameTypeAuthority Name | NameTypeAuthority Description |
|---|---|---|---|---|---|---|
| 94 | 1fee7d08-9077-45c9-bfb1-a5d23f6cde06 | Test UUID | Test NameType Name | Test NameType Description | Test NTA Name | Test NTA Description |
| 92 | 6b64eb6e-8265-43a0-90b9-31e7e2e1d053 | Test Name | Test NameType Name | Test NameType Description | Test NTA Name | Test NTA Description |
| 93 | 8a1e8a70-0b56-449e-aeaa-9ef2cbde77ed | Test Name | Test NameType Name | | Test_name NTA | |
| 88 | 704f338c-65b5-4db6-8e62-aa23e1f04f32 | test | test | test | test | test |
| 89 | dfe21a7b-a374-452a-8669-3a1ce87b2603 | test | test | v | test | test |
| 90 | 4b1dc672-5332-4086-a358-e1e07a7b5a18 | test | test | test | test | test |
| 91 | cb72ec25-e993-4e05-a6d7-67d3c601b479 | Test | Test1 | Test2 | Test3 | Test4 |
| 87 | 94cd8d83-6fc7-4bdb-93c3-f81ec37fb1c0 | t | | | | |
| 86 | 096835c1-64bc-4c19-a606-61d8c6b23a9e | SQA Test | NT Name | NT Des | NTA Name | NTA Des |
| 85 | da3dbfe3-f952-4acb-912b-7ff3e2201a0e | SOAP Test4 | SOAP Test4 | SOAP Test4 | SOAP Test4 | SOAP Test4 |

First Page | Previous | 1/10 | Next | Last Page | 10 ▼

*Figure 11:  Default screen listing only 10 entries.*

| 7 | da3cd262-1ce9-49d7-b49c-679a8b887167 | A Test 041 | Composite Switch | Casts spells | Test3 | Test4 |
|---|---|---|---|---|---|---|
| 6 | 2909aa29-b835-4e59-bfc1-561393fe391b | A Test 032 | CEO | Generic Description | test | SOAP Test3 |
| 4 | ad2a4697-e6b5-4071-9ea9-831d9e09855e | A Test 01 | Composite Switch | Company Executive Officer | TVA | nameTest |
| 5 | 18a12cfa-532a-456b-b587-58950d2e1204 | A Test 01 | Composite Switch | Company Executive Officer | TVA | nameTest |
| 3 | 1e6ee4fa-1e47-4a09-80d4-916129d11f76 | A Test 0 | HRIS, Sr Analyst | None | test | Tennessee Valley Authority |
| 2 | 7a8d8745-34bc-4718-8260-70183aacfb0f | A New Entry | Meter Reading | Meter Entry Description | KUB | Knoxville Utilities Board |
| 1 | bd4825e3-2a4f-42af-9534-733410d292b8 | | | | | |

First Page | Previous | 1/1 | Next | Last Page | 100 ▼

*Figure 12:  100 results now listed per page.*

## Query

The "Query" tab provides a simple query tool that searches for exact values. It is not case-sensitive, however, so if the name "Billy Bob" is searched, it will provide results for "Billy Bob", "billy bob", "BiLlY BoB", etc., however it won't provide results for just "billy".

## Query the DB

Select:

○ UUID: [              ]

● Name : [DaNieL LoWe     ]

○ NameType Name : [              ]

○ NameType Description : [              ]

○ NameTypeAuthority Name : [              ]

○ NameTypeAuthority Description : [              ]

[ Submit ]

| entry | UUID | Name | NameType Name | NameType Description | NameTypeAuthority Name | NameTypeAuthority Description |
|---|---|---|---|---|---|---|
| 33 | 95ced897-95ba-43ba-9c54-c274a971d2f3 | Daniel Lowe | Meter Reading | | | |
| 34 | b8806289-3d0d-4eac-af9d-96f381973984 | Daniel Lowe | Meter Reading | | EPRI | |
| 35 | aeb89af1-c11c-4b44-91cf-27f1129845e4 | Daniel Lowe | Meter Reading | | | |
| 36 | b5689095-1311-4602-b551-3bd4f1edc9a7 | Daniel Lowe | Meter Reading | | | |
| 37 | b46a3862-fbbc-4ada-913b-6470de857d20 | Daniel Lowe | Meter Reading | | | |

*Figure 13: Querying the client for "Daniel Lowe". Case is unimportant here, but this tool only searches exact phrases and only searches one field at a time. Server/client source code could be modded to make this more robust.*

# CIMIdentitiesClient

CIMIdentitiesClient is a desktop application that requires internet access to connect to a remote database to make changes. It has two tabs: one for inserting, modifying, or deleting data, and the other tab for viewing the data and exporting it to a csv for further manipulation if desired.

## Insert

As with the JSP client, insert has the same functionality here in that you can insert a blank entry if desired. Any string is accepted (a stream of numbers is converted to a String value).



*Figure 14: An entry is about to be inserted.*

Name

Daniel Lowe

Select Name

Daniel Lowe ▼

NameType Name

Meter Reading

Select Name

Meter Reading ▼

NameType Description

Generic Desc

Select Description

**Message**                                                                                    ✕

ⓘ    Data inserted:

     Name: Daniel Lowe
     NameType Name: Meter Reading
     NameType Description: Generic Description
     NameTypeAuthority Name: LCUB
     NameTypeAuthority Description: Lenoir City Utilities Board

                                                                              OK

NameTypeAuth

LCUB

NameTypeAuth

Lenoir City Utilities Board

UUID    ⊙ Randomly Generate

*Figure 15:  Confirmation message appears when entry has been inserted.*

## Modify

When modifying an entry, the UUID of the entry to be changed is needed. All fields must be filled in here (the drop box might allow a faster entry for longer descriptions). An incorrect UUID will result in an error message.



*Figure 16: Modifying an entry. Note that ALL fields must be filled in or else they will be replaced with blanks.*

## Delete

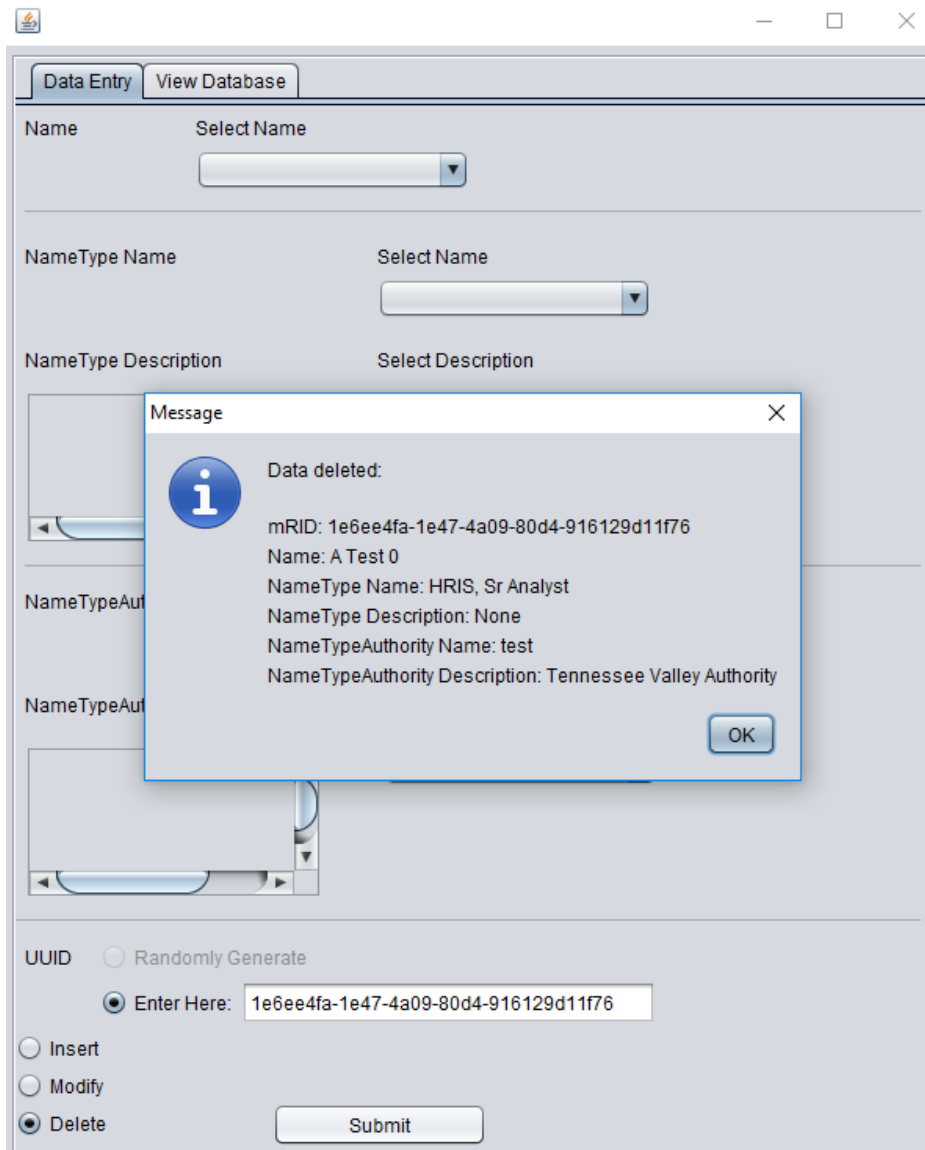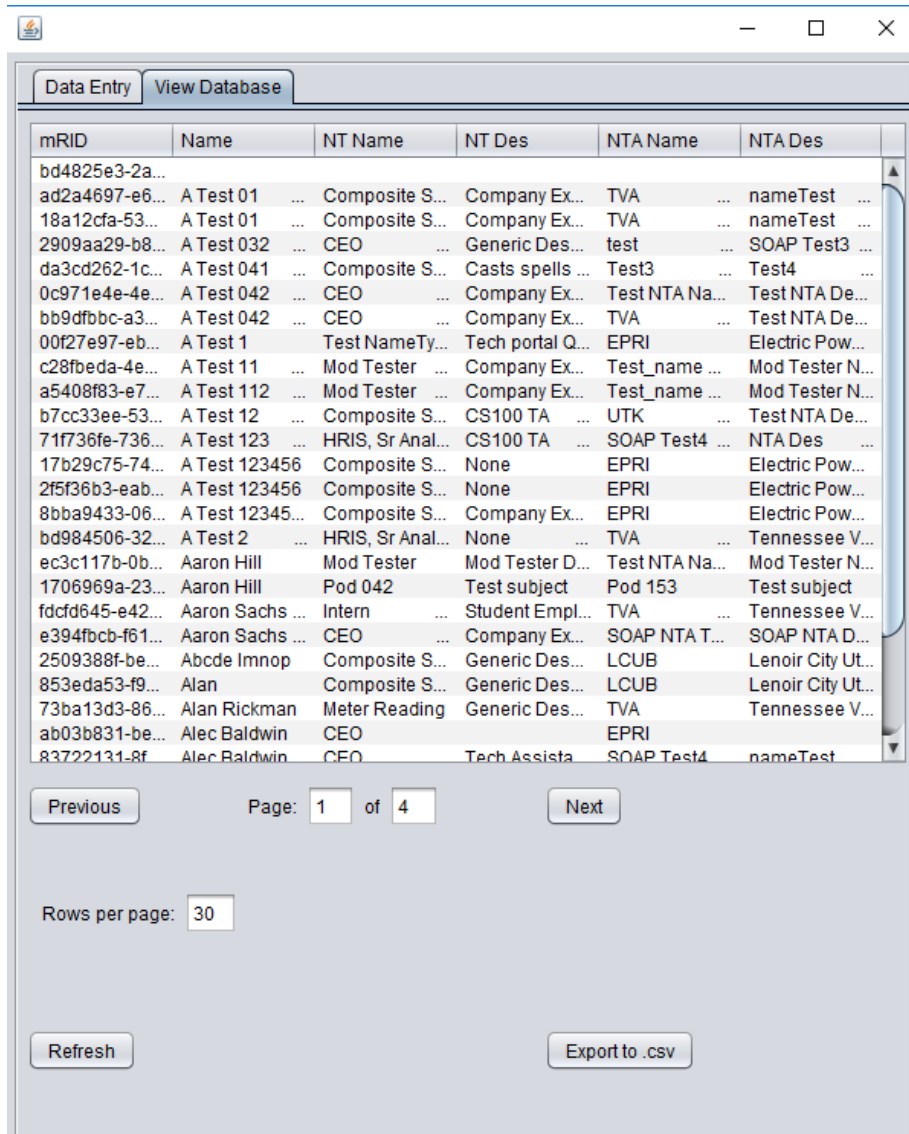As with modifying, the UUID is needed for deletion.  In this case, only the UUID is needed.  An incorrect UUID will result in an error message.



*Figure 17:  Only the UUID is needed for deletion.  A confirmation dialog will show the data that was deleted.*

# View Database

The "View Database tab allows you to view the contents of the PostgreSQL database without having to interface with the command line tools or GUI provided by PostgreSQL (which some security settings may not allow the installation of).  It provides somewhat similar functionality to the JSP client's database view tab, allowing the user to change results per page or export to a CSV file if desired.
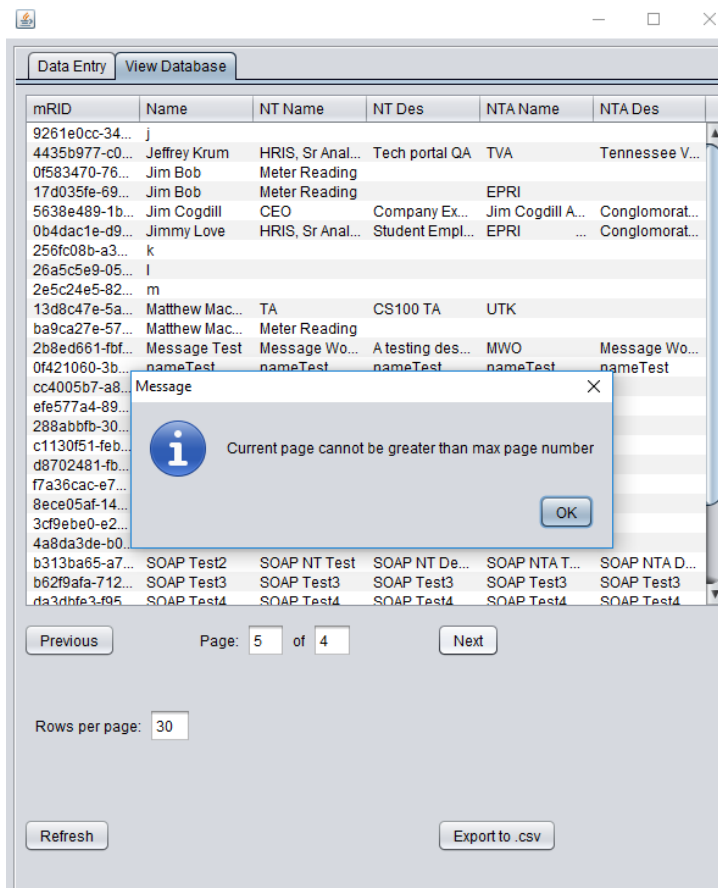


*Figure 18:  The View Database tab.*

## Next/Previous Buttons

The next/previous buttons behave as expected, doing nothing if on the first page and selecting "Previous" or the last page and selecting "Next".

## Page

Here you can manually type the page number to view. An appropriate error message will appear if the page number is invalid (shown below).

## Export to CSV

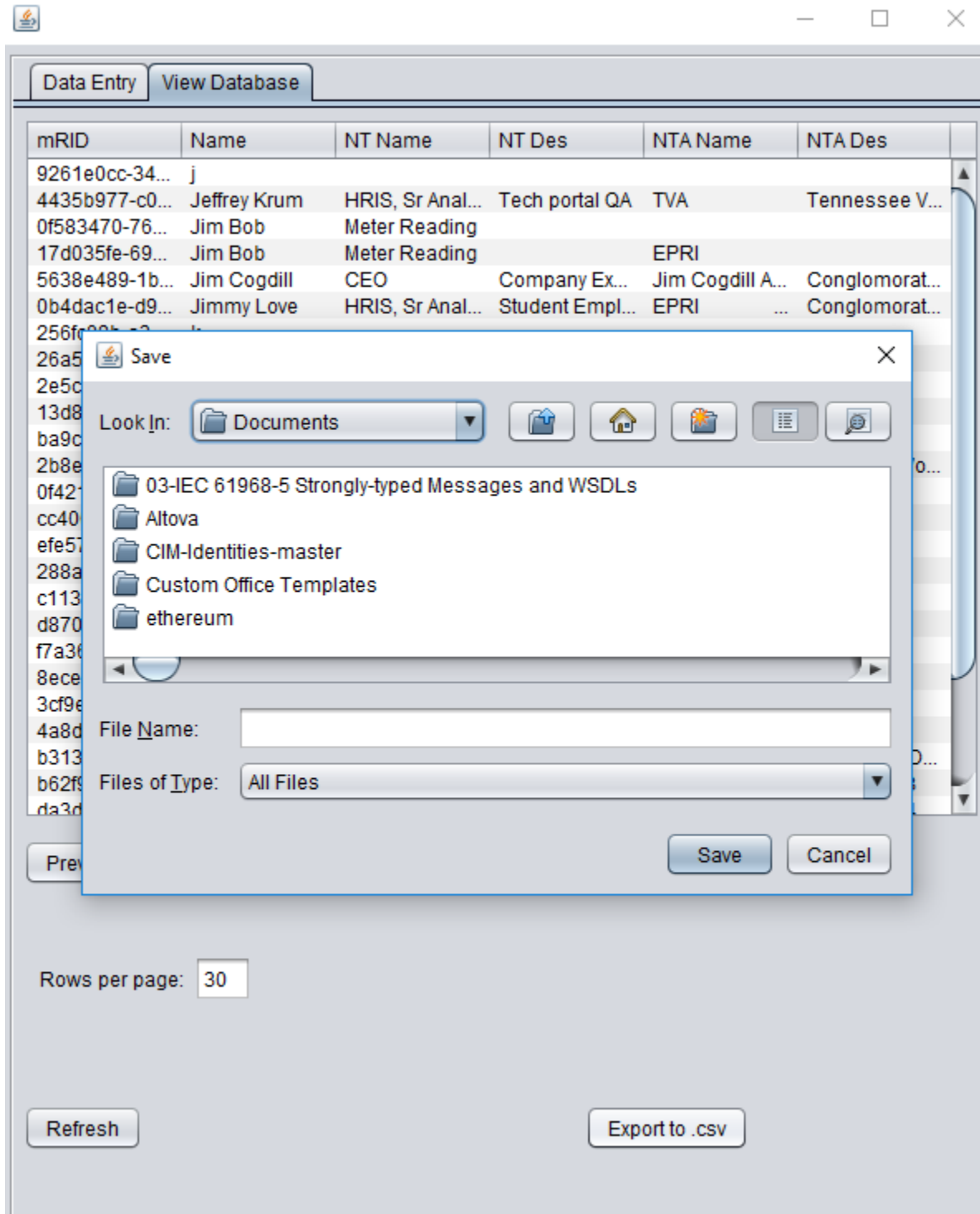Clicking this button brings up the option to save the data as a CSV file.  It defaults to "Documents".



Figure 19:  Saving the file as csv.