

# 1.8.1a Release Notes

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# Important links

## Downloads:

- i2b2 Download Page (binaries and virtual machine): <https://www.i2b2.org/software/index.html>
- i2b2 - New Web client with redesigned user interface (source code) [i2b2/i2b2-webclient: Source code for the i2b2 Web Client \(github.com\)](#)
- i2b2 GitHub (source code): [i2b2 Foundation \(github.com\)](#)

## Documentation:

- Data Export: [Data Exporter \(v 1.8.1\)](#)
- i2b2-omop install: [i2b2-on-OMOP With ENACT-OMOP Ontology v4.1](#)
- totalnum counting scripts: [Patient Counting Scripts \("totalnum"\)](#)
- New Web client reference: [New Web Client Install Guide](#) and [Help](#)
- Digital Twin Bundle (distributed separately): [Digital Twin Technologies](#)

## 1.8.1a Release Notes

i2b2 1.8.1a Release builds on the rewritten web interface introduced in 1.8 with new features and new administration tools, it introduces a powerful new data export module, and it adds core support for the OMOP data model on Postgres databases (adding to MSSQL and Oracle databases in 1.8).

This release includes fix for breakdown queuing for SQL and Postgres queries when the SQL breakdowns take a long time to finish after the patientset completes - references [CORE-443](#)

## Highlight of Features

### Top New Features

Description		
-------------	--	--

Modern UI  
Enhancements  
with Admin  
Console

Terms

Any Category

ACT COVID-19

ACT Demographics

ACT Diagnoses ICD-10-CM

ACT Diagnoses ICD10-CM

ACT Diagnoses ICD-9-CM

ACT Laboratory Tests

ACT Laboratory Tests (Provisional)

ACT Medications Alphabetical

ACT Medications VA Classes

ACT Procedures CPT-4

ACT Procedures HCPCS

ACT Procedures ICD-10-PCS

ACT Procedures ICD-9-Proc

ACT Research

ACT Social Determinants of Health

ACT Vaccination

ACT Vital Details

ACT Vital Signs

ACT Zip Code

Info

Workplace

000-G99 Diseases Of The Nervous System (000-G99) (2010AB-2022AB)

Description

This term is a draggible folder which can be used in a query. The term represents the code of ICD10CM 000-G99 and may have children below it.

Concept Path

ACT\_DX\_ICD10\_2018AACTDiagnosisICD10V2\_2018AA2008482A18821335

SQL Code (to reference children)

SELECT \* FROM concept\_dimension WHERE concept\_path LIKE 'ACTDiagnosisICD10V2\_2018AA2008482A18821335%';

Values

This term does not allow values to be set.

Queries

Any Category

000-G99 Diseases Of The Nervous System (000-G99) (2010AB-100-99 Diseases Of

000-G99 Diseases Of The Nervous System (000-G99) (2010AB-2022AB) (916:1:11) (

000-G99 Diseases Of The Nervous System (000-G99) (2010AB-2022AB) (916:1:11) (

C50-C50 Malignant Neoplasms Of Breast (C50) (2010AB-2022AB) (911:3:2) (9-26-2004

C50-C50 Malignant Neoplasms Of Breast (C50) (2010AB-2022AB) (911:3:2) (9-26-2004

C50-C50 Malignant Neoplasms Of Breast (C50) (2010AB-2022AB) (911:3:2) (9-26-2004

C50-C50 Malignant Neoplasms Of Breast (C50) (2010AB-2022AB) (911:3:2) (9-26-2004

Find Patients

Analysis Tools

Find Patients

with

without

when

000-G99 Diseases Of The Nervous System (000-G99) (2010AB-2022AB) - 23141

or drag additional concepts

Set date range and/or occurrence for this entire panel

and

with

without

when

000-99 Diseases Of The Circulatory System (000-99) (2010AB-2022AB) - 54839

or drag additional concepts

Set date range and/or occurrence for this entire panel

and

with

without

when

drag a concept here to define inclusion or exclusion criteria

Name:

000-G99 Diseases Of The Nervous System (000-G99) (2010AB-100-99 Diseases Of The Circulatory System (000-99) (20

Find Patients

Clear All

Query Status

Age patient breakdown

14,000

12,000

10,000

8,000

6,000

4,000

2,000

0

0-4

5-9

10-14

15-19

20-24

25-29

30-34

35-39

40-44

45-49

50-54

55-59

60-64

65-69

70-74

75-79

80-84

85-89

90-94

95-99

100-104

105-109

110-114

115-119

120-124

125-129

130-134

135-139

140-144

145-149

150-154

155-159

160-164

165-169

170-174

175-179

180-184

185-189

190-194

195-199

200-204

205-209

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315-319

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725-729

730-734

735-739

740-744

745-749

750-754

755-759

760-764

765-769

770-774

775-779

780-784

785-789

790-794

795-799

800-804

805-809

810-814

815-819

820-824

825-829

830-834

835-839

840-844

845-849

850-854

855-859

860-864

865-869

870-874

875-879

880-884

885-889

890-894

895-899

900-904

905-909

910-914

915-919

920-924

925-929

930-934

935-939

940-944

945-949

950-954

955-959

960-964

965-969

970-974

975-979

980-984

985-989

990-994

995-999

1000-1004

1005-1009

1010-1014

1015-1019

1020-1024

1025-1029

1030-1034

1035-1039

1040-1044

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1080-1084

1085-1089

1090-1094

1095-1099

1100-1104

1105-1109

1110-1114

1115-1119

1120-1124

1125-1129

1130-1134

1135-1139

1140-1144

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1200-1204

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3395-3399

3400-3404

3405-3409

3410-3414

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3990-3994

3995-3999

4000-4004

4005-4009

4010-4014

4015-4019

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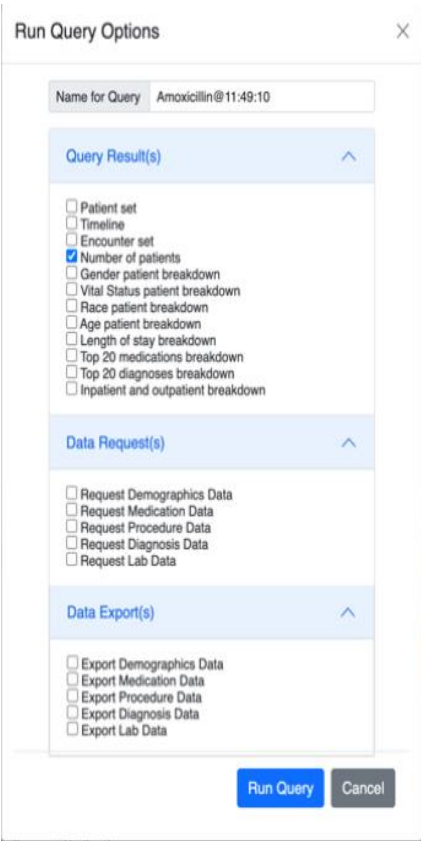
4065-4069

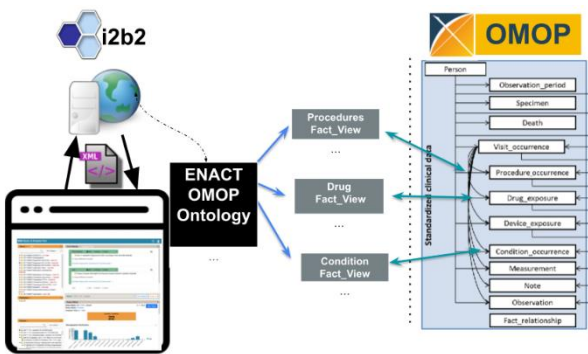
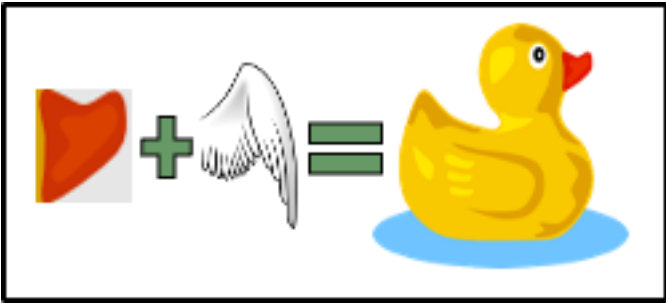

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<p><a href="#">Data Exporter extension for i2b2</a></p>		<p>Using the Run Query breakdown dialog, patient data can be exported as flat files to be loaded into SAS, R and other data analytic tools for further analysis.</p>
<p>ACT Ontology Version 4.1</p>	<ul style="list-style-type: none"> <li>+  ACT COVID-19</li> <li>+  ACT Demographics</li> <li>+  ACT Diagnoses ICD-9-CM</li> <li>+  ACT Diagnoses ICD-10-CM</li> <li>+  ACT Diagnoses ICD10-ICD9</li> <li>+  ACT Laboratory Tests</li> <li>+  ACT Laboratory Tests (Provisional)</li> <li>+  ACT Medications Alphabetical</li> <li>+  ACT Medications VA Classes</li> <li>+  ACT Procedures ICD-9-Proc</li> <li>+  ACT Procedures CPT-4</li> <li>+  ACT Procedures HCPCS</li> <li>+  ACT Procedures ICD-10-PCS</li> <li>+  ACT Research</li> <li>+  ACT Social Determinants of Health</li> <li>+  ACT Vaccination</li> <li>+  ACT Visit Details</li> <li>+  ACT Vital Signs</li> <li>+  ACT Zip Code</li> </ul>	<p>Version 4.1 provides 19 ontologies supporting i2b2 and OMOP CDM architectures on ORACLE, SQLServer and Postgres databases.</p>

<a href="#">i2b2 on OMOP for Postgres database</a>		<p>The core i2b2 platform now supports the OMOP data model on Postgres database (adding to existing Oracle and SQLServer OMOP support), which is queryable through the comprehensive ENACT-OMOP Ontology.</p>
<a href="#">Digital Twin Bundle</a> (distributed separately)		<p>Tools for computing loyalty cohorts and computational phenotypes in i2b2.</p>
Bug fixes		

## Community-Contributed Features

Contribution	Contributor	Description
<a href="#">ACT-Ontology Version V4.1</a>	<b>Michele Morris</b> (University of Pittsburgh)	<p>The ACT V4.1 Ontology supporting i2b2 and OMOP CDMs enables queries to be run in i2b2 query tool against ORACLE, SQLServer and Postgres databases.</p>

## Detailed Documentation on New Features

### Data Exporter extension for i2b2

i2b2 can now export patient data for a patient set. The workflow involves breakdowns in the webclient, which allow users to request exports and data managers to generate exports. The export types and options are fully configurable in the database. Detailed documentation on set up can be found here: [Data Exporter Set-up](#)

The below steps describe the overall process:

- User logs into i2b2 webclient and runs a regular i2b2 query, checking the desired **Data request** breakdown option when running the query.
- E-mail is sent to the data manager and the User, informing them that the user's data request has been made.
- The manager logs in and reruns the user query with the **Data Export** breakdown selection to generate the export flat files.
- The generated export flat file is stored in a configurable location on the i2b2 server.
- An e-mail is sent to the manager confirming the file extract and how to access the files (which can be shared with the requester).

### Steps to upgrade:

First, install the new war file. Next, upgrade the database. Because the upgrade requires loading some new content from the NewInstall, we have created an ant target to upgrade the data tables: upgrade\_tables\_release\_1-8-0 This should be run from Upgrade/CrcData, e.g., ant f data\_build.xml upgrade\_tables\_1 8-0

Detailed upgrade instructions can be found here: [Upgrade to version 1.8.1](#)

## ACT - V4.1 Ontology

The V4.1 Ontology includes 19 ontologies- 3 new and 11 updated and 5 unchanged

Metadata and CRC zip files are provided to load the latest ENACT Version-4.1 ontology into your db schema using ANT scripts.

The CPT4 ontology table is not included with i2b2 due to AMA restrictions on redistribution of CPT code information. Contact the ENACT team to get a copy if your institution is an AMA member.

### ACT V4.1 data load process

1. Download and extract the newinstall zip package from "Download Binary Distribution" in the top section of <https://www.i2b2.org/software>
2. Edit the edu.harvard.i2b2.data\Release\_1-8\NewInstall\Metadata\db.properties file to update the project properties to 'ACT' ; db.project=ACT
3. From the edu.harvard.i2b2.data\Release\_1-8\NewInstall\Metadata folder, run the ant command: ant -f data\_build.xml db\_metadata\_load\_data. This will execute the SQL

scripts from the edu.harvard.i2b2.data\Release\_1-8\NewInstall\Metadata\act\scripts\<db type> folder to create and load the metadata tables

4. From the edu.harvard.i2b2.data\Release\_1-8\NewInstall\crcdata folder, run the ant command: ant -f data\_build.xml db\_demodata\_load\_data. This will execute the SQL scripts from the edu.harvard.i2b2.data\Release\_1-8\NewInstall\crcdata\act\scripts\<db type> folder to create and load the concept\_dimension
5. Run the scripts from the edu.harvard.i2b2.data\Release\_1-8\NewInstall\Metadata\<dbtype>\scripts folder to load the Schemes, Table\_access tables
6. You can now verify the new Ontology by logging into the webclient

Additional details on the ontology are available at [this link](#).

### ACT i2b2 on OMOP for Postgres database

ACT i2b2 on OMOP functionality uses ACT Ontology in the front-end and enables the i2b2 Software to run against Postgres database that uses the OMOP CDM architecture.

For enabling use of an OMOP database with i2b2, follow the instructions in the install guide for a new install of i2b2 using the i2b2-OMOP install option. The documentation here will guide you through this process. [i2b2-on-OMOP With ENACT-OMOP Ontology v4.1](#)

For historical reference on old 2018 OMOP installation , refer to [OMOP Home on i2b2 Community Wiki](#)

## Changelog

### Database Drivers

The JDBC drivers were updated to the following versions.

Server Type	oracle	Postgresql	mssql
Driver Version	ojdbc8.jar	postgresql-42.7.1.jar	mssql-jdbc-12.4.2.jre8.jar

### Supported Db Server versions

Server Type	SQL Server	Oracle	PostgresSQL
Supported Version/s	2012+ (tested with up to 2022)	23.3	9 to 14

## Supported software versions

Application Type	Java	Wildfly	Apache HTD	Apache Ant	Apache Axis2	PHP
<b>Supported Version/s</b>	8 or 11	17.0.1Final	2.0 (RHEL 6) and 2.2 (RHEL 7)	1.9.6	1.7.1	7.2.27 or higher

## Supported Operating Systems

Rocky linux 8 and 9, CentOS versions 7

Windows 2016 -2019

- There is a new PHP install process for IIS in the i2b2 install guide: [2.5.3.2 PHP for Windows](#)

Unofficially, MacOS and other flavors of Linux are likely to work.

## i2b2 Server and Client Changes

### New Features and Improvements

Web client
<a href="#">WEBCLIENT-360</a> New web client User Interface fixes/improvements for 1.8.1
Core-server
<a href="#">CORE-428</a> Data export Extension for i2b2 using java classes and breakdowns
<a href="#">CORE-448</a> I2b2 on OMOP- Postgres - java changes
<a href="#">CORE-447</a> Update JDBC drivers
<a href="#">CORE-450</a> html injection in Queryname and workplace

## i2b2 Database Changes

### New Features and Improvements

<a href="#">DATA-17</a> ACT v4.1 ontology - ANT scripts (github)
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<a href="#">DATA-24</a>	I2b2 on OMOP- Postgres
<a href="#">DATA-38</a>	Loyalty cohort and computational phenotypes stored procedures for MSSQL and ORACLE
<a href="#">DATA-32</a>	Faster Totalnum (patient counting) script!

## Bug Fixes

Core-server / Data	
<a href="#">CORE-440</a>	Queries from queue are not processing and returning back_
<a href="#">CORE-443</a>	Breakdown queueing
<a href="#">DATA-43</a>	old crcddata folder , metadata1 subfolder 1.8.1 issue fixes

## Notes for Developers

- For Java 11 install, if you change the xsd (REST API message definitions), then you will need to regenerate gensrc via JAXB in Java 8. In the i2b2-core cell directory for which you're regenerating the XSD-Java, run the ant target "jaxb\_gen" on Java 8 and then build as usual using Java 11.
  - For developers that need to recompile the new admin tool in the webclient, remove the package-lock.json file from i2b2-webclient/plugins/edu/harvard/catalyst/admin-tool/ before compiling. This will ensure you have the latest non-breaking changes for all third-party libraries used in building the tool, including security fixes.
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