



# i2b2 Data Installation Guide (Linux)

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## About this Guide

Informatics for Integrating Biology and the Bedside (i2b2) is one of the sponsored initiatives of the NIH Roadmap National Centers for Biomedical Computing (<http://www.bisti.nih.gov/nbc/>). One of the goals of i2b2 is to provide clinical investigators broadly with the software tools necessary to collect and manage project-related clinical research data in the genomics age as a cohesive entity—a software suite to construct and manage the modern clinical research chart. This guide with the provided database scripts will help you to learn how to install the i2b2 data package.

## Document Version History

<b>Date</b>	<b>Revision</b>	<b>Description</b>	<b>Author(s)</b>
10/26/07	1.0	Version 1.0	Lori Phillips
10/17/08	1.1	Release 1.3	Lori Phillips
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# 1

## Prerequisites

### ***Required Software***

#### **Oracle Express Edition**

- a) Download Oracle Database 10gExpress Edition (Universal) 'oracle 10g EE' 'oracle-xe-univ-10.2.0.1-1.0.i386.rpm' from

<http://www.oracle.com/technology/software/products/database/xe/htdocs/102xe/linsoft.html>

- b) Run 'rpm -i oracle-xe-univ-10.2.0.1-1.0.i386.rpm' as root

Run '/etc/init.d/oracle-xe configure' as root to configure the database

Select HTTP and listener ports (use defaults 8080/1521 if they are available)

Select 'Y'es to start on boot when asked

- c) To verify that Oracle was properly installed, open a browser and enter <http://yourDbHost:yourPort/apex>. You should see an Oracle Database Express Edition login screen.

-OR-

#### **Sql Server Express Edition**

- a) Download Sql Server Express Edition 2005 from <http://www.microsoft.com/express/sql/download/default.aspx>

- b) Download and run the SQL Server Express Install Wizard

Select the edition of SQL Server Express to install

Click Install

## ***Assumptions***

### **a. PM setup**

The data in this package provides data for a domain of i2b2demo and two projects: Demo and Demo2. The assumption is that the PM service has been configured as such. In the PM install guide, projects are referred to as groups. You will need to ensure that groups Demo and Demo2 have been created as shown in section 3 step 3.

Skip to section 4, step 5 to assign users to groups Demo and Demo2.

# 2

## Install

### ***Installing the i2b2 Data Package***

#### **1. Unzip the data package into a folder: (/opt/data)**

You should see the project edu.harvard.i2b2.data.

```
'cd edu.harvard.i2b2.data /Release_1-4/NewInstall'
```

This is considered your data installation working directory. Under this directory are folders for Demodata, Metadata, and Workdata. These map to schemas i2b2demodata, i2b2metadata and i2b2workdata for project Demo and i2b2demodata2, i2b2metadata2 and i2b2workdata2 for project Demo2. Folder Hivedata maps to the i2b2hive schema.

#### **2 a. Create user accounts in Sql Server :**

Log into Sql Server Management Studio and create the following databases:

- I2b2metadata
- I2b2demodata
- I2b2workdata
- I2b2metadata2
- I2b2demodata2
- I2b2workdata2
- I2b2hive
- I2b2pm

Also create the following user associated with the specific database

User name	Password	Database
I2b2metadata	demouser	i2b2metadata
I2b2demodata	demouser	i2b2demodata
I2b2workdata	demouser	i2b2workdata
I2b2metadata2	demouser	i2b2metadata2
I2b2demodata2	demouser	i2b2demodata2
I2b2workdata2	demouser	i2b2workdata2
I2b2hive	demouser	i2b2hive
I2b2pm	demouser	i2b2pm

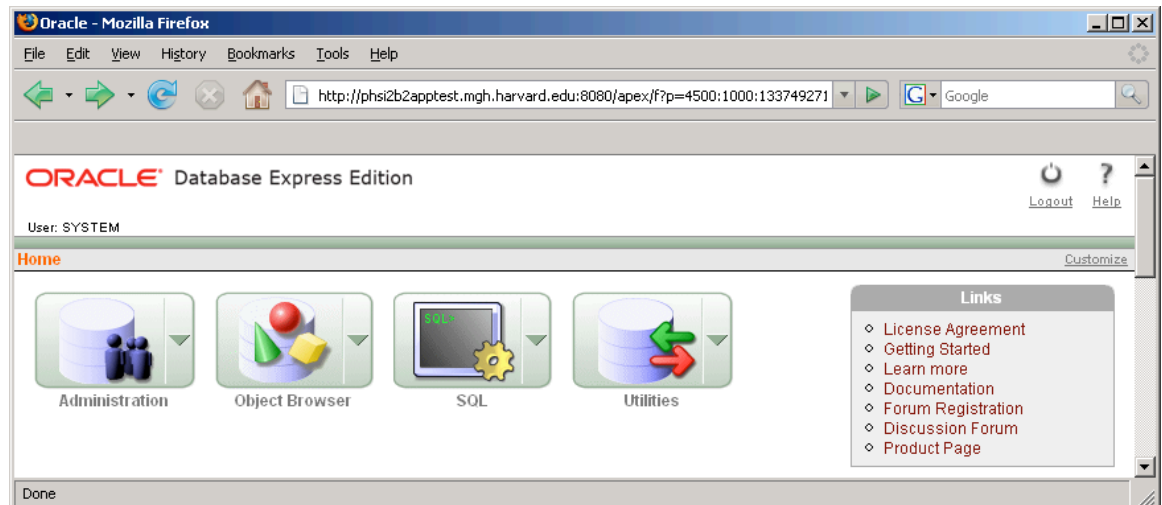
OR

## 2 b. Create user accounts in Oracle :

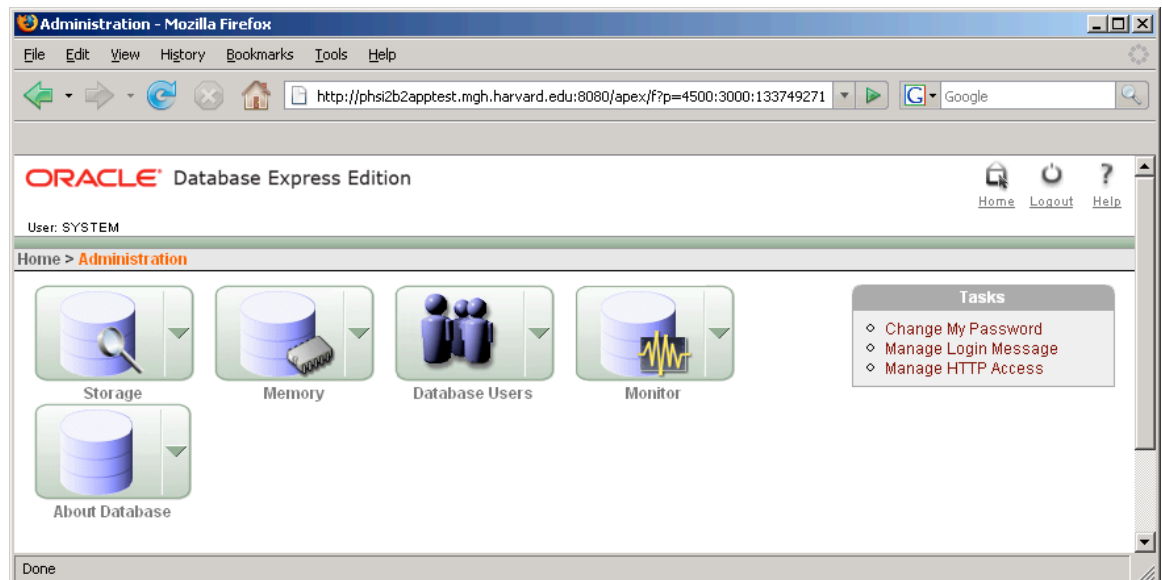
In browser, open <http://yourDbHost:8080/apex>.

Log in as system user

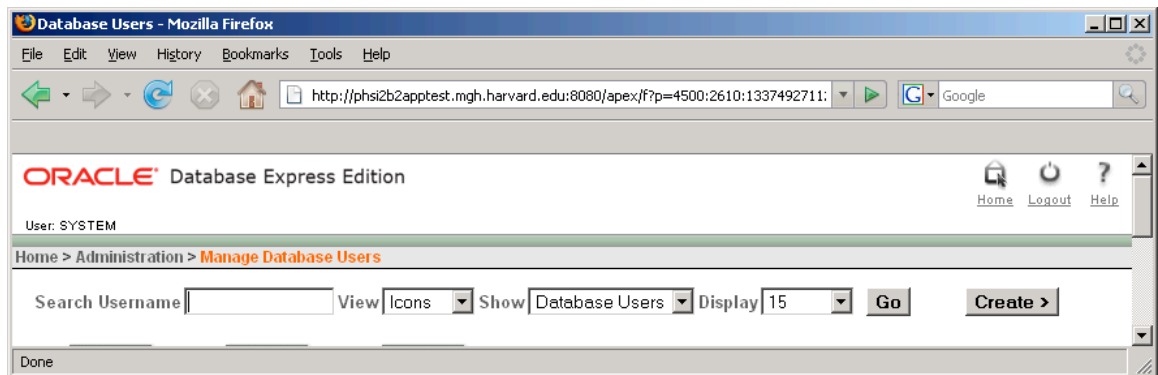
Select Administration



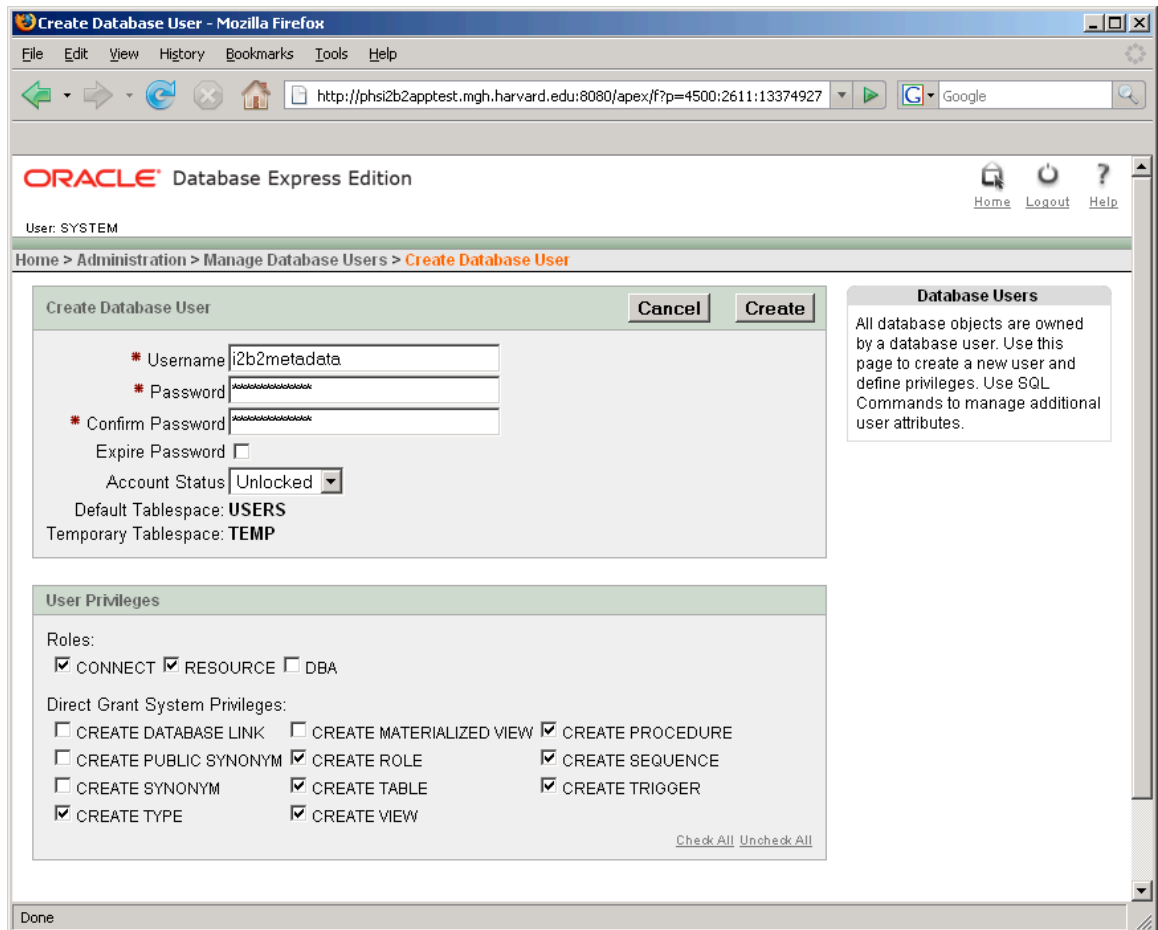
Select Database Users



Select Create



Enter i2b2metadata user name and password. Check off Direct grant system privileges as shown below. Repeat for users i2b2demodata, i2b2workdata for project Demo, users i2b2metadata2, i2b2demodata2, i2b2workdata2 for project Demo2 and user i2b2hive and i2b2pm.



### 3. Create Metadata tables and load data:

- a) 'cd Metadata' of your working directory.  
(edu.harvard.i2b2.data /Release\_1-4/NewInstall)
- b) Edit db.properties  
Set database properties; be sure to set user/pswd to i2b2metadata and project to demo;

#### Oracle:

```
db.type=oracle
db.username=i2b2metadata
db.password=i2b2metadata_pswd
db.server=localhost:1521:xe
db.driver=oracle.jdbc.driver.OracleDriver
db.url=jdbc:oracle:thin:@localhost:1521:xe
db.project=demo
```

OR

#### Sql Server:

```
db.type=sqlserver
db.username=i2b2metadata
db.password=i2b2metadata_pswd
db.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
db.url=jdbc:sqlserver://localhost:1433;databasename=demo
db.project=demo
```

- c) To create metadata tables, indexes and sequences :  
Run 'ant -f data\_build.xml create\_metadata\_tables\_release\_1-4'
- d) To load data:  
If you wish to load your own metadata, do that now.

Otherwise:

Run 'ant -f data\_build.xml db\_metadata\_load\_data'

This may take a while (15 minutes)

- e) Edit db.properties for user/pswd i2b2metadata2 and project demo2.  
Repeat steps c and d.

### 4. Create Demodata tables and load data:

- a) 'cd Demodata' of your working directory.  
(edu.harvard.i2b2.data /Release\_1-4/NewInstall)
- b) Edit db.properties  
Set database properties; be sure to set user/pswd to i2b2demodata and project to demo.

**Oracle:**

```
db.type=oracle
db.username=i2b2demodata
db.password=i2b2demodata_pswd
db.server=localhost:1521:xe
db.driver=oracle.jdbc.driver.OracleDriver
db.url=jdbc:oracle:thin:@localhost:1521:xe
db.project=demo
```

OR

**Sql Server:**

```
db.type=sqlserver
db.username=i2b2demodata
db.password=i2b2demodata_pswd
db.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
db.url=jdbc:sqlserver://localhost:1433;databasename=demo
db.project=demo
```

- c) To create demodata tables, indexes and sequences :  
Run 'ant -f data\_build.xml create\_demodata\_tables\_release\_1-4'
- d) To create new stored procedures:  
Run 'ant -f data\_build.xml create\_procedures\_release\_1-4'
- e) To load data:  
If you wish to load your own demo data, do that now.
- Otherwise:  
Run 'ant -f data\_build.xml db\_demodata\_load\_data'

This may take a while (15 minutes)

- f) Edit db.properties for user/pswd i2b2demodata2 and project demo2.  
Repeat steps c, d and e.

## 5. Create Workdata tables and load data:

- a) 'cd Workdata' of your working directory.  
(edu.harvard.i2b2.data /Release\_1-4/NewInstall)
- b) Edit db.properties  
Set database properties; be sure to set user/pswd to i2b2workdata, and project to demo.

**Oracle:**

```
db.type=oracle
db.username=i2b2workdata
db.password=i2b2workdata_pswd
db.server=localhost:1521:xe
db.driver=oracle.jdbc.driver.OracleDriver
db.url=jdbc:oracle:thin:@localhost:1521:xe
db.project=demo
```

OR

**Sql Server:**

```
db.type=sqlserver
db.username=i2b2workdata
db.password=i2b2workdata_pswd
db.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
db.url=jdbc:sqlserver://localhost:1433;databasename=demo
db.project=demo
```

- c) To create workdata tables, indexes and sequences :  
Run 'ant -f data\_build.xml create\_workdata\_tables\_release\_1-4'

- d) To load data:  
If you wish to load your own work data, do that now.

Otherwise:

Run 'ant -f data\_build.xml db\_workdata\_load\_data'

- e) Edit db.properties for user/pswd i2b2workdata2 and project demo2.  
Repeat steps c and d.

## 6. Create Hive tables and load data:

- a) 'cd Hivedata' of your working directory.  
(edu.harvard.i2b2.data /Release\_1-4/NewInstall)

b) Edit db.properties

Set database properties; be sure to set user/pswd to i2b2hive.

**Oracle:**

```
db.type=oracle
db.username=i2b2hive
db.password=i2b2hive_pswd
db.server=localhost:1521:xe
db.driver=oracle.jdbc.driver.OracleDriver
db.url=jdbc:oracle:thin:@localhost:1521:xe
```

or

**Sql Server:**

```
db.type=sqlserver
db.username=i2b2hive
db.password=i2b2hive_pswd
db.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
db.url=jdbc:sqlserver://localhost:1433;databasename=demo
```

c) To create hive tables, indexes and sequences :

Run 'ant -f data\_build.xml create\_hivedata\_tables\_release\_1-4'

d) To load data:

If you wish to load your own hive data, do that now.

Otherwise:

Run 'ant -f data\_build.xml db\_hivedata\_load\_data'

The data loaded into the three i2b2hive db\_lookup tables presumes that the default target location pointing to the hive we are now setting up is 'i2b2demo'. This target location is also referred to as the domain of the hive and should match the domain set up in the PM setup.

In the client's i2b2.properties file:

```
I2b2.1=demo,REST,http://webservices:9090/i2b2/rest/PMService/
I2b2.2=HarvardDemo,REST,http://services.i2b2.org/PM/rest/PMService/
#I2b2.3=YourSite,REST,http://jbossHost:jbossPort/i2b2/rest/PMService/
```

The I2b2.1 target location ('demo') points to the hive residing on the vmware image. The i2b2.2 target location, HarvardDemo points to the hive residing at Harvard. The data installed at Harvard is identical to the data provided in this package. The hive we are now setting up is I2b2.3. Please be sure to rename 'YourSite' to 'i2b2demo'.

## 7. Create PM tables and load data:

- a) 'cd Pmdata' of your working directory.  
(edu.harvard.i2b2.data /Release\_1-4/NewInstall)
- b) Edit db.properties  
Set database properties; be sure to set user/pswd to i2b2pm

### Oracle:

```
db.type=oracle
db.username=i2b2pm
db.password=i2b2pm_pswd
db.server=localhost:1521:xe
db.driver=oracle.jdbc.driver.OracleDriver
db.url=jdbc:oracle:thin:@localhost:1521:xe
```

or

### Sql Server:

```
db.type=sqlserver
db.username=i2b2pm
db.password=i2b2pm_pswd
db.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
db.url=jdbc:sqlserver://localhost:1433;databasename=demo
```

- c) To create pm tables, indexes and sequences :  
Run 'ant -f data\_build.xml create\_pmdata\_tables\_release\_1-4'
- d) To create pm triggers :  
Run 'ant -f data\_build.xml create\_triggers\_release\_1-4'
- e) To load data:  
If you wish to load your own pm data, do that now.  
  
Otherwise:  
Run 'ant -f data\_build.xml db\_pmdata\_load\_data'

## 8. You are now ready to proceed with hive installation.

# 3

## License

The i2b2 source code is licensed under the i2b2 Software License Software. This includes but not limited to all code in the `edu.harvard.mgh.i2b2.*` package namespace.