

i2b2 Webclient Plugins Installer v1.0 Setup Guide

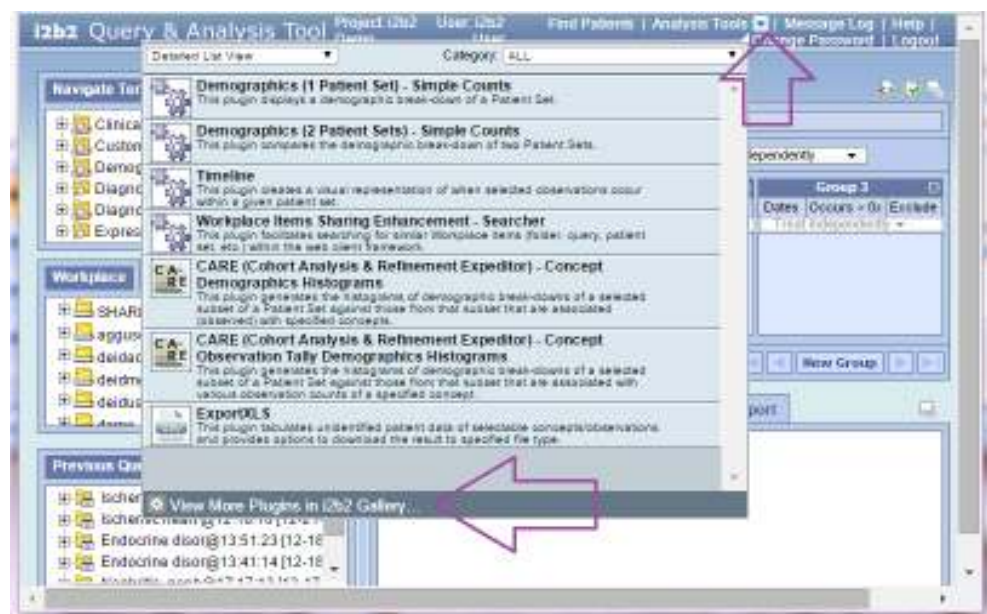
Introduction

Starting with version 1.7.0.7 of i2b2, the webclient will be released with this installer as a compliment. The purpose of this installer is to facilitate the selection and installations of webclient plugins onto the local i2b2 installation.

This installer is comprised mainly of php server side codes. It has the following characteristics:

- A) It can be either invoked from the i2b2 web-admin (in the “view and install” mode) or the i2b2 webclient (in the “view gallery only” mode if the webclient user DOES NOT have the “admin” role, or in the “view and install” mode the webclient user DOES have the “admin” role), as illustrated here:

- a. Launch from the webclient:



- b. Launch from the web-admin:

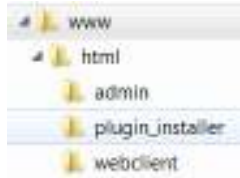


- B) In either mode, the installer will be opened in a new browser tab.

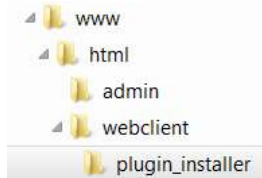
Setup and Configuration

As a complement to the webclient, this installer can be installed from its publicly available package in the following manner:

- 1) Unzip this i2b2 Webclient Plugins Installer package, into the /plugin_installer folder that is
 - a. either at the same level as the webclient's and web-admin's (i.e. the /plugin_installer folder is a sibling to the /webclient and /admin folders, respectively);



- b. or at the children level of the webclient's or web-admin's (i.e. the /plugin_installer folder is a child to either the /webclient or the /admin folder, respectively).



- 2) The links to launch this installer must first be enabled for each, by adding an "installer:" entry in the corresponding i2b2_config_data.js (i.e. the webclient/i2b2_config_data.js and admin/i2b2_config_data.js, respectively) files. The following examples illustrate how this file should be updated to reflect the location of this installer.

- a. The installer folder is at the same level as the webclient's and web-admin's (i.e. the /plugin_installer folder is a sibling to the /webclient and /admin folders, respectively):

- A. The updated webclient i2b2_config_data.js file may have the following content excerpt –

```
//-----  
IstDomains: [  
  {  
    domain: "i2b2demo",  
    name: "i2b2demo",  
    urlCellPM: "http://localhost:9090/i2b2/services/PMService/",  
    allowAnalysis: true,  
    debug: true,  
    installer: "/plugin_installer/"  
  }  
]  
//-----
```

- B. The updated web-admin i2b2_config_data.js file may have the following content excerpt –

```
//-----  
IstDomains: [  
  {  
    domain: "i2b2demo",  
    name: "i2b2demo",  
    urlCellPM: "http://localhost:9090/i2b2/services/PMService/",  
    allowAnalysis: true,  
    debug: true,  
    installer: "/plugin_installer/",  
    adminOnly: true  
  }  
]  
//-----
```

- b. The installer folder is at the children level of the webclient's or web-admin's (i.e. the /plugin_installer folder is a child to either the /webclient or the /admin folder, respectively):

A. The updated webclient i2b2_config_data.js file may have the following content excerpt –

```
//-----  
lstDomains: [  
  {  
    domain: "i2b2demo",  
    name: "i2b2demo",  
    urlCellPM: "http://localhost:9090/i2b2/services/PMService/",  
    allowAnalysis: true,  
    debug: true,  
    installer: "/webclient/plugin_installer/"  
  }  
]  
//-----
```

B. The updated web-admin i2b2_config_data.js file may have the following content excerpt –

```
//-----  
lstDomains: [  
  {  
    domain: "i2b2demo",  
    name: "i2b2demo",  
    urlCellPM: "http://localhost:9090/i2b2/services/PMService/",  
    allowAnalysis: true,  
    debug: true,  
    installer: "/webclient/plugin_installer/",  
    adminOnly: true  
  }  
]  
//-----
```

- 3) Review and edit, if necessary, the plugin_installer/config.php file (note: this is the only file within the /plugin_installer folder that should be edited) to ensure that the **\$webclient_path** is set to the path of your own webclient (please note that a typical path is provided for both a linux and a Windows install, with the linux version defaulted). The following illustrates how this parameter is shipped in this file:

```
10  
11 # $webclient_path contains absolute local path to the i2b2 webclient  
12 $webclient_path = "/var/www/html/webclient/"; # on linux  
13 # $webclient_path = 'c:\inetpub\webclient\'; # on Windows  
14
```

- 4) Ensure the PHP on your i2b2 server is of the appropriate version (please refer to the “PHP Version” section below).
5) Read through the rest of this document completely and carefully.
6) Refer to the “Key Folders and File Access Rights” section below every time before initiating any webclient plugins installations.

Usage

When invoked from the webclient as a non-admin user, the plugin installer will open in a new browser tab page in the “view gallery only” mode, in which the user is shown only all the available webclient plugins, with limited information for each, but not the options to install or download any plugins.

i2b2 Webclient Plugins Manager

Gallery: **Available i2b2 Webclient Plugins for Automated Installation**

Please contact your i2b2 Administrator to request (with justifications) adding any available plugins.

Plugin Name	Plugin Description	Plugin Group	Currently Installed?	Installed Version	Latest Version	Updates in this Version	Certified for i2b2 Version	Historical Community Contributors	More Information
Demographics (1 Patient Set) - Simple Counts	This plugin displays a demographic break-down of a Patient Set.	community			1.1	Fixed incompatibility issues with Web Client 1.7.07	1.7.0.7		
Demographics (2 Patient Sets) - Simple Counts	This plugin compares the demographic break-down of two Patient Sets.	standard	YES	unknown	1.1	Fixed incompatibility issues with Web Client 1.7.07	1.7.0.7		Wiki User Manual
Example #5 - Communicator Tool	This plugin allows you to interact directly with standard Cell Communicator objects within the web client framework.	examples			1.0	Initial release	1.7.0.7		
Example #3 - PDO Request	This plugin demonstrates how to retrieve information using the Patient Data Object (PDO).	examples			1.0	Initial release	1.7.0.7		
Example #1 - Hello World	This plugin demonstrates how to register a plugin within the i2b2 web client framework.	examples			1.0	Initial release	1.7.0.7		

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The idea is to allow users to see if there is any plugins out there not yet installed on the current i2b2 server that they may find useful for their researches. They can then follow up with their i2b2 admin to find out if their current roles would enable them to use such plugins and request their installations.

When invoked from the webclient as an admin, or invoked from the web-admin, the plugin installer will open in a new browser tab page in the “view and install” mode, in which the admin is shown all the available webclient plugins, with all information for each, especially the options to install or download each.

i2b2 Webclient Plugins Manager

Gallery: Available i2b2 Webclient Plugins for Automated Installation [1][2][3]

Plugin Name	Plugin Description	Plugin Group	Currently Installed?	Installed Version	Latest Version	Updated in this Version	Compatible for i2b2 Version	Historical Community Contributors	More Information	Folder Name ⁽¹⁾	User Roles	Action	Configuration After Installation
Demographics (1 Patient Set) - Simple Counts	This plugin displays a demographic breakdown of a Patient Set.	community			1.1	Force incompatibility occurs with Web Client 1.7.0.7	1.7.0.7			Dem1Set	"DATA_LDS", "DATA_DEB", "DATA_PROT"	Install Download	None required
Demographics (2 Patient Sets) - Simple Counts	This plugin compares the demographic breakdown of two Patient Sets.	standard	YES	unknown	1.1	Force incompatibility occurs with Web Client 1.7.0.7	1.7.0.7		Wiki User Manual Installation Guide	Dem2Set	"DATA_LDS", "DATA_DEB", "DATA_PROT"	Install Download	Refer to Chapter 7.4 of the i2b2 Installation Guide
Example #5 - Communicator Test	This plugin allows you to interact freely with standard Cell Communicator agents within the web client framework.	examples			1.0	Initial release	1.7.0.7			ExampComm	"DATA_AGG", "DATA_LDS", "DATA_DEB", "DATA_PROT", "ACQWR"	Install Download	None required
Example #1 - RDO Request	This plugin demonstrates how to retrieve information using the Patient Data Object (PDO).	examples			1.0	Initial release	1.7.0.7			ExampPDO	"DATA_DEB", "DATA_PROT"	Install Download	None required
Example #1 - Hello World	This plugin demonstrates how to register a plugin within the i2b2 web client framework.	examples			1.0	Initial release	1.7.0.7			ExampHello	"DATA_OBFS", "DATA_AGG", "DATA_LDS", "DATA_DEB", "DATA_PROT"	Install Download	None required

NOTE:

- (1) Only 'installer' files NOT accompanying new or modified cell webclient plugins are eligible for automated installation.
a) Please ensure that your i2b2 webclient folder write access has been set properly to enable installations.
- (2) Please contact us to submit your plugin to our repository for automated installation, with the following information:
a) any dependent standard software licenses to be included;
b) any installation guide, readme, or user's manual to be included.
- (3) Please check the resulting display to see if a plugin requires additional installation steps beyond the basic ones automated.
- (4) Plugin Group refers to the name of the webclient intermediary subdirectory (examples: 'standard', 'community') that houses the codes for this plugin.
a) The 'examples' group houses all plugins that are of example nature (e.g. 'ExampHello', etc.).
b) All the 'standard' group plugins that ship with the i2b2 webclient are under the 'standard' group (e.g. 'Dem1Set', etc.).
c) The 'community' group contains all popular plugins not distributed with the i2b2 webclient; they are usually developed and shared by community institutions (e.g. 'ExampRDO', etc.).
***** NOTICE: that if a popular plugin has its previous version installed under the 'standard' group, then it won't be detected (as it is expected under the 'community' group only). *****
- (5) Folder Name refers to the name of the subdirectory within the webclient directory that houses the codes for this plugin.
We included this information here to facilitate your finding out if you already have the corresponding plugin installed.

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With the additional details (such as "Folder Names", "User Roles", "Configuration After Installation", etc.) provided, the admin can make meaningful decisions as to whether certain plugins are good fits for their institution. They should read carefully all the relevant footnotes and additional information (i.e. "Wiki", "User Manual", and "Installation Guide", etc.), as well as reference the "Key Folders and File Access Rights" section below before initiating any webclient plugins installations.

The following are key relevant points for an admin to bear in mind:

- 1) In either mode, for each plugin, the installer searches for its "Folder Name" under the webclient to determine if an earlier version has been installed.
- 2) The installer would not be able to determine the version of any installed plugins if they are not installed through this installer. The "Installed Version" fields of those plugins will be displayed as "Unknown" or blank.
- 3) Earlier versions of some of the 'community' plugins (i.e. those developed by other i2b2 community members) may have called for their installations under the 'standard' subfolder (group). In those cases, since the installer expects all 'community' plugins to be under the 'community' subfolder, and

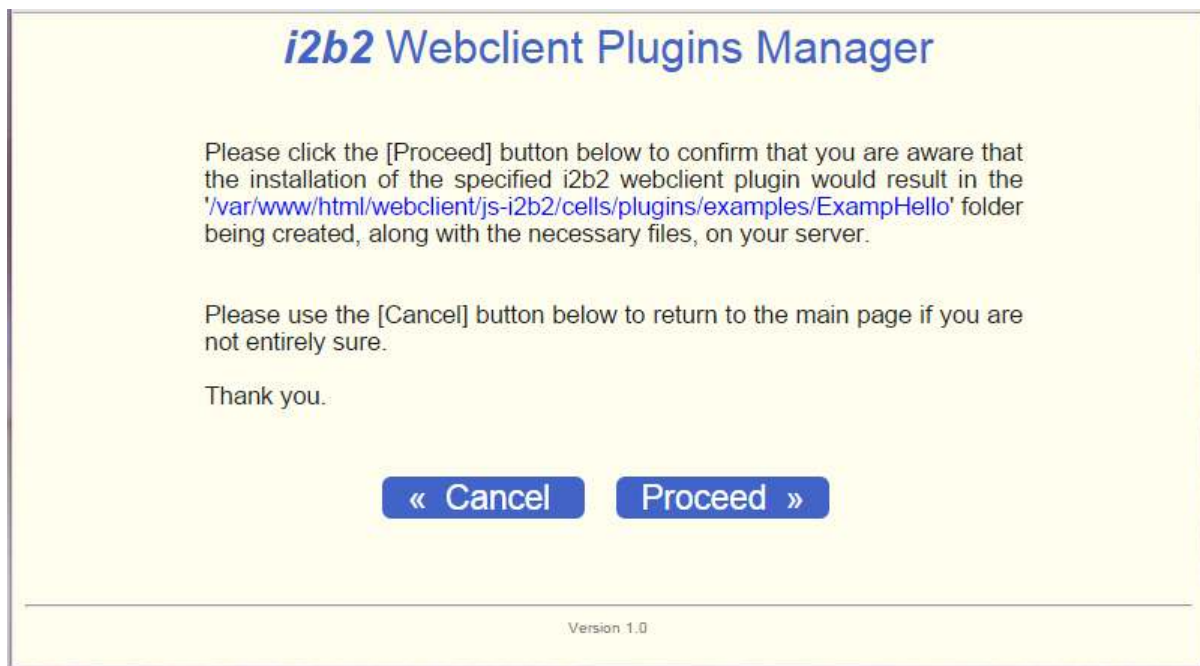
therefore always searches under that subfolder; they may NOT be marked as “Currently Installed” – it is recommended that if the latest versions of such plugins are desired, then the earlier installed versions under the ‘standard’ subfolder be manually removed (both a plugin’s subfolder and its corresponding entry in the /webclient/js-i2b2/i2b2_loader.js).

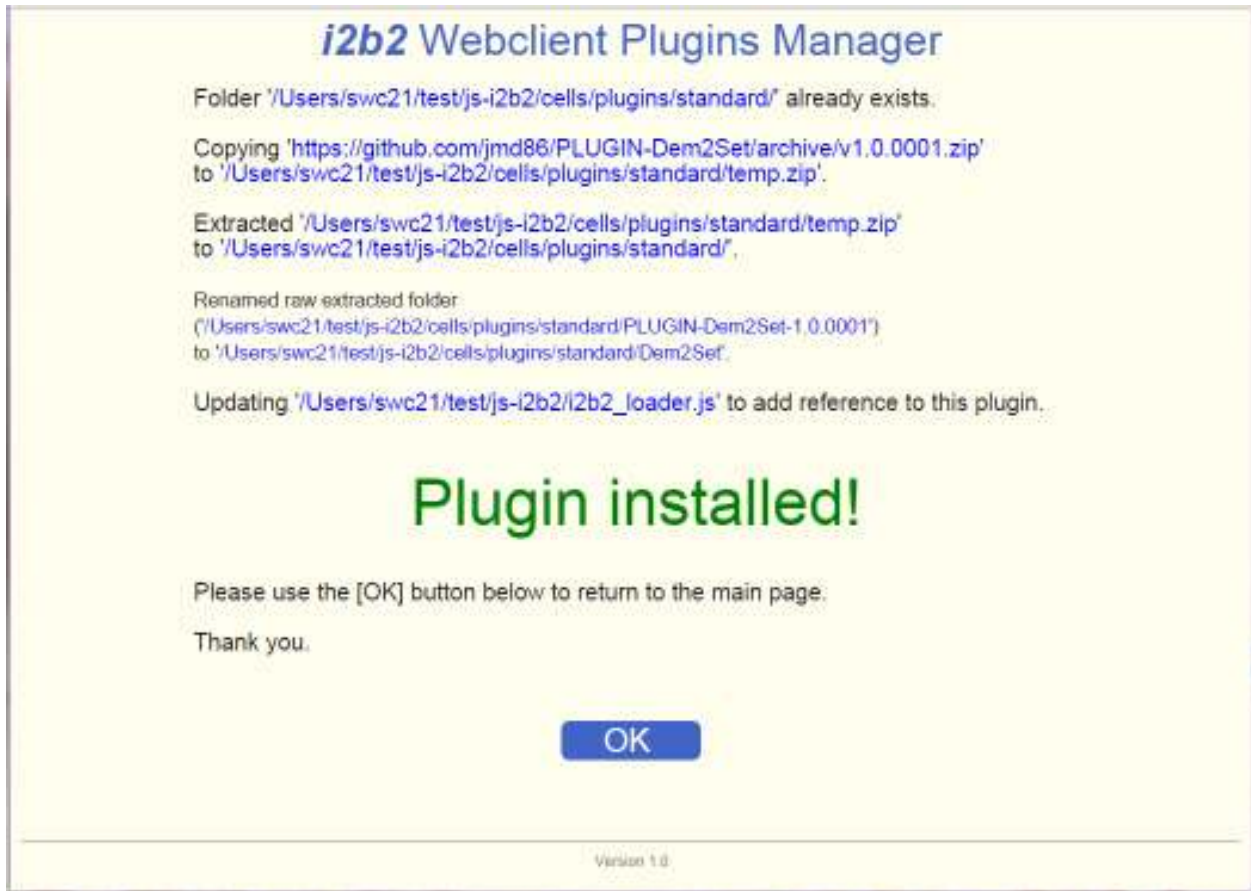
- 4) Please refer to the “Configuration After Installation” field for a plugin installed, to complete any manual part (if any) of the installation involved.
- 5) For any issues specific to the functionalities of any installed plugins, please contact their developers.

When the **Download** button for a plugin is clicked, the zip-package for that plugin will be downloaded directly onto i2b2 server:



When the **Install** button for a plugin is clicked, the “install confirm” page will be displayed to inform the admin of the consequence and a chance to back out:





Categories or Groups of Webclient Plugins

All webclient plugins should be categorized as under one of the following three groups: 'standard', 'examples', and 'community':

1. The 'examples' group houses all plugins that are of example nature (e.g. "ExampHello", etc.).
2. All the "standard issue" plugins that ship with the i2b2 webclient are under the 'standard' group (e.g. "Dem1Set", etc.).
3. The 'community' group contains all popular plugins not distributed with the i2b2 webclient; they are usually developed and shared by community institutions (e.g. "ExportXLS", etc.).

Key Folder and File Access Rights

The installation of a typical plugin involves the following steps:

1. Placement of the plugin's subfolder (<pluginFolderName>) inside the webclient folder
⇒ i.e. adding /webclient/js-i2b2/cells/plugins/<pluginCategory>/<pluginFolderName>/*.
 - where <pluginCategory> is either standard, examples, or community;
 - and examples of <pluginFolderName> are ExportXLS, WISEsearcher, CAREncptDem, CAREobsTally, etc.
2. Adding reference of that plugin to the /webclient/js-i2b2/i2b2_loader.js file

⇒ e.g.

```
{ code: "<pluginFolderName>",  
  forceLoading: true,  
  forceConfigMsg: { params: [] },  
  roles: [ 'DATA_LDS', 'DATA_DEID', 'DATA_PROT' ],  
  forceDir: "cells/plugins/community"  
},
```

3. Any appropriate follow up manual setup fine-tuning or configuration, as called for in that plugin's "Installation Guide", and / or the appropriate "Configuration After Installation" entry, on the plugin installer main page, for that plugin.

It therefore follows that the following entities must have the appropriate access rights (please refer to the "Appendix 1: Changing Access Rights on Linux" and "Appendix 2: Changing Access Rights on Windows" for details pertaining to changing the access rights on folders and files on each Operating System platform):

- A. The /webclient/js-i2b2/cells/plugins/standard folder ("Read and Write").
- B. The /webclient/js-i2b2/cells/plugins/examples folder ("Read and Write").
- C. The /webclient/js-i2b2/cells/plugins/community folder ("Read and Write").
- D. The /webclient/js-i2b2/i2b2_loader.js file ("Read and Write").
- E. The /webclient/plugin_installer subfolder and its content (i.e. /webclient/ plugin_installer/*.*) files ("Read").

As a balance between security and the basic requirement of this installer (which would also apply if any of the webclient plugins, or for that matter, the i2b2 and its webclient themselves, were to be installed manually by the users themselves), it is recommended that the following steps be followed:

1. Review and record the access permissions to the file and folders listed above.
2. Change the access permissions to the file and folders listed above.
3. Run the plugin installer and install all desired plugins.
4. Revert back to the original access permissions for all the file and folders listed above.

In other words, just as one would do for manual installations, adjust to appropriate access permissions on a temporary "as needed" basis only.

PHP Version

The installer was developed with the PHP version 5.5.29 (Zend Engine v2.5.0). Note that it may not work with earlier versions.

Appendix 1: Changing Access Rights on Linux

Please refer to any of the following articles for detailed discussion on this topic:

<https://www.linux.com/learn/tutorials/760276-how-to-manage-file-and-folder-permissions-in-linux>,
<http://www.firewall.cx/linux-knowledgebase-tutorials/introduction-to-linux/299-linux-file-folder-permissions.html>,
<http://www.yourownlinux.com/2013/09/chmod-basics-of-filesdirectories.html>,
<http://linuxcommand.org/lts0070.php>,

Appendix 2: Changing Access Rights on Windows

Please refer to the following article, <https://msdn.microsoft.com/en-us/library/bb727008.aspx>, from Microsoft, for a very detailed discussion on this topic.