

TIES TCRN Node Installation Plan

Introduction

This TIES TCRN Node Installation Plan sets forth the process, methods, and procedures that can be used by an institution when establishing a public and private node sufficient to join the network.

Purpose and Scope

This plan is intended to augment instructions found on the TIES TCRN website, embedded in the TIES TCRN Installer, and presented in the TIES Quality Assurance Plan. This plan provides a high level starting point for the Providing Organization's Administrator who is responsible for:

- *obtaining a license to join the TCRN network*
- installing the node
- designating Organizational Founding Users
- establishing rudimentary Quality Assurance Studies while acting as delegate to Founders.

Note: *As of May 19, 2014 the license acquisition process has not been implemented. This feature is slated for the next release.*

Team

Only the Provider Admin will exercise this plan. However, it is necessary that a Provider Researcher, and Provider Honest Broker be designated. Real user data must be entered into the system so that the basic functionality of data preparation and search can be tested in the initial rudimentary Quality Assurance process.

Role	Responsibility	Skills
Admin	Responsible for <i>obtaining a license</i> , installing and performing rudimentary QA	The TIES Provider Admin must be able to create new Users and Studies, assign Users to Studies, and sanction requests from external studies to access local data and tissue. It is assumed the Admin will accomplish all the tasks in this Plan. Nevertheless it is important that a Researcher and Honest Broker be designated.
Researcher	Individual destined to be among first Primary Investigators at the Providing Organization.	This Researcher will have typically authored the original license request and will have been integral in the business plan to join TCRN in the first place.
Honest Broker	Individual destined to be among first Honest Brokers at Providing Organization.	May be a Tissue Bank manager, or LIS Data Management Supervisor.

Process

Node initiation proceeds in a sequence of steps. The next step does not begin until the previous step is completed and accepted.

Step 1: Register and Obtain a TCRN license

Submit an application to join the network via the TIES website. When approved you will receive an email with your license code. You will need this license code when registering your node with the network after installation. See Step 5 below.

Note: *Registration is not implemented as of May 19, 2014.*

Step 2: Prepare Registration and QA information

Prepare the user information profiles for your Organization, yourself as Admin as well as an initial Primary Investigator (Researcher) and an initial Honest Broker. You will need the following information.

Field	Example
Organization Name	Rosswell Park Cancer Institute
Organization Abbreviated Name	RPCI
Organization Street Address	Elm St
Organization City	Buffalo
Organization State	NY
Organization Zip	14263
Organization Country	USA
Admin First Name	Mayurapriyan
Admin Last Name	Sakthivel
Admin User Name	msakthivel
Admin Email	Mayurapriyan.Sakthivel@RoswellPark.org
Admin Phone	9999999999
Admin Fax	9999999999

The same set of fields entered for the Admin are needed later for Researcher and Honest Broker. So now is a good time to gather and log this information.

Field	Example
Researcher First Name	<i>Carmelo</i>
Researcher Last Name	<i>Gaudioso</i>
Researcher User Name	<i>gudiosoc</i>
Researcher Email	<i>Carmelo_Gaudioso@RoswellPark.org</i>

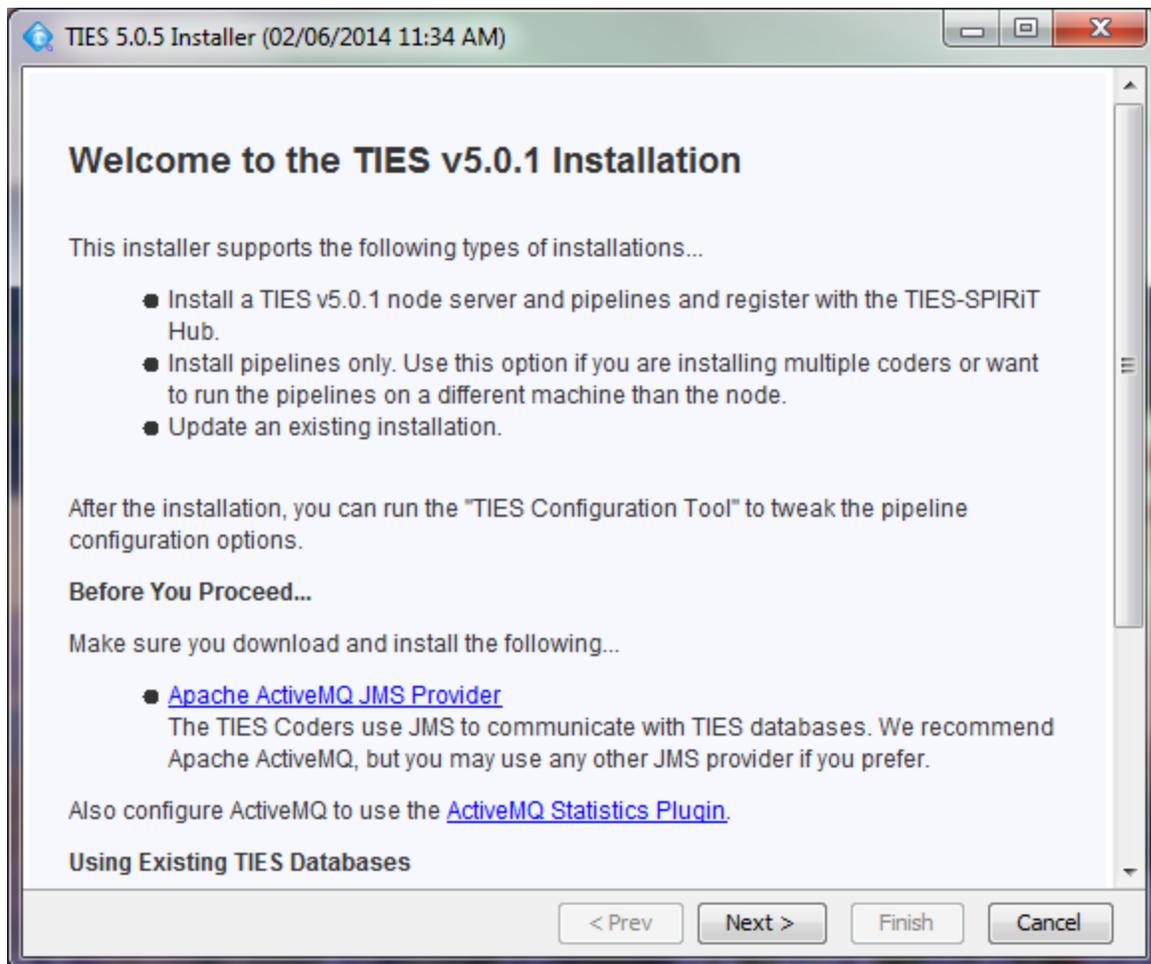
Researcher Phone	<i>7168453051</i>
Researcher Fax	<i>999999999</i>
Honest Broker First Name	<i>Monica</i>
Honest Broker Last Name	<i>Murphy</i>
Honest Broker User Name	<i>murphym</i>
Honest Broker Email	<i>murphym@RosswellPark.org</i>
Honest Broker Phone	<i>9999999999</i>
Honest Broker Fax	<i>9999999999</i>

Step 3: Requisite Hardware and Software

Make sure the latest version of Java 7 is installed on your installation target machine. It is assumed that a sufficient operating system and hardware platform has been established. The installer will run as a Java Web Start Application and install the TIES Node on your machine. TIES Team recommendations for a single machine hardware configuration can be found [here](#). The IP for this machine should have the equivalent of an input/output firewall exception for protocol HTTP on port 80. A meaningful DNS name should be established for the public entry point. (e.g., ties-tcrn.rpci.org)

Step 4: Run the installer

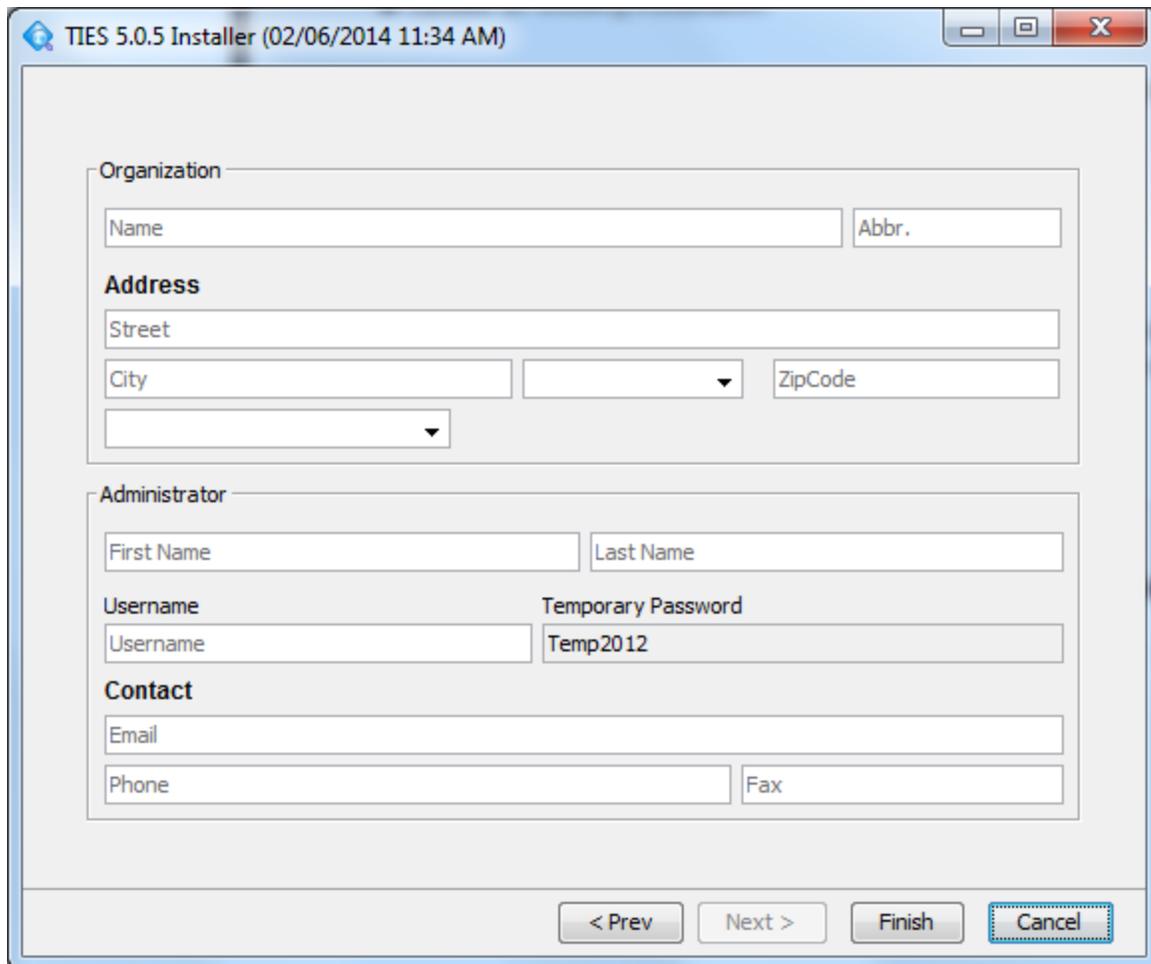
Found here at [ties-spirit installer](#).



Follow the instructions of the installer.

Step 5: Register with the Hub

Once the software has downloaded and the services are configured and started you will be prompted to register your node with the TCRN central hub server. Fill in the form with accurate details, these must match with your TCRN license key details for the registration to be accepted.



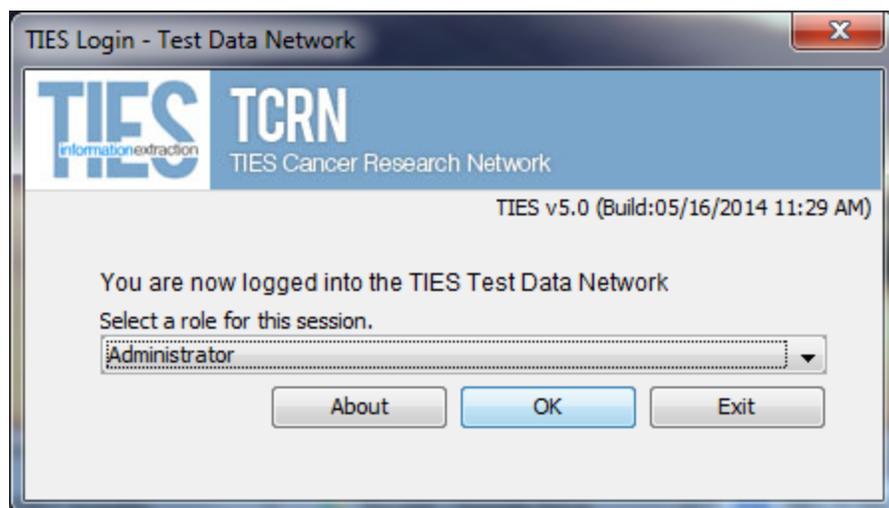
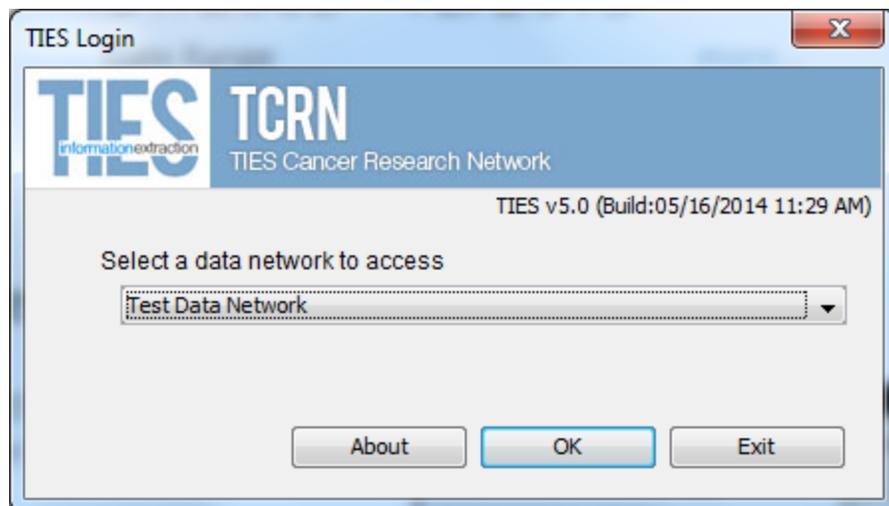
The image shows a screenshot of the 'TIES 5.0.5 Installer' window. The title bar indicates the window name and the date/time: 'TIES 5.0.5 Installer (02/06/2014 11:34 AM)'. The window contains a registration form with the following sections:

- Organization:** Two text input fields labeled 'Name' and 'Abbr.'.
- Address:** A text input field for 'Street', a text input field for 'City', a dropdown menu, and a text input field for 'ZipCode'.
- Administrator:** Two text input fields for 'First Name' and 'Last Name', a text input field for 'Username', and a text input field for 'Temporary Password' (containing 'Temp2012').
- Contact:** A text input field for 'Email', a text input field for 'Phone', and a text input field for 'Fax'.

At the bottom of the window, there are four buttons: '< Prev', 'Next >', 'Finish', and 'Cancel' (which is highlighted with a dashed border).

Step 6: Log in to your Organization via the Test Data Network

Even though you will be working exclusively on your Local Organization your access will now be coordinated via the TCRN Hub server. Access the TIES Client [here](#). At installation time your Provider Node is automatically populated with a number of test reports. Begin by searching for these. But before searching you need to establish a quality assurance study using your Admin privileges.



Step 7: Change your temporary password

In step 5 you may recall that a temporary password was granted. All new Administrators are given the same temporary password, "Temp2012". When logging in the first time you will be asked to change your temporary password to a high strength personal password.

Step 8: Create New Users for Researcher and Honest Broker

Select the New User toolbar button. Fill in the information for your designated Researcher.

Repeat the process for your designated Honest Broker.

Login Information	
Username	
Password	soar5cys

User Information	
First Name	
Last Name	
Street Address	
City	
State	
Country	
Zip Code	
Phone	
Fax	
Email	

User Role	
Select Role	Researcher

OK Cancel

Take note of the username and auto-generated Password (here soar5cys). You will need to enter this information when acting as the Researcher and Honest Broker delegate.

Step 9: Create an Admin Level QA protocol.

Study Information	
Title	RPCI Admin QA
Abbreviated Name	RPCI_A_QA
Type	Data Only

University of Pittsburgh	
IRB Approval No.	RPCI_A_QA
Approval Date	05 / 16 / 2014
Expiration Date	<input checked="" type="checkbox"/> Never Expires
PITT's Role	Owner
Report Types Allowed	<input checked="" type="checkbox"/> Pathology +

OK Cancel

Set it to a meaningful name since this study will be used into the future. Use Data Only, Never Expires, Report Types Allowed equals Pathology.

Step 10: Add Researcher and Honest Broker to the Admin QA Protocol

Select the study you just created.

The screenshot shows the TIES v5.0 Administrator interface for the University of Pittsburgh (Test Data Network). The window title is "TIES v5.0 - Administrator, Test Protocol 1 - University of Pittsburgh (Test Data Network)". The interface includes a menu bar (File, View, Help) and a toolbar with options like "New User", "New Study", "Close Tab", "Close All Tabs", "Switch Role", and "My Account".

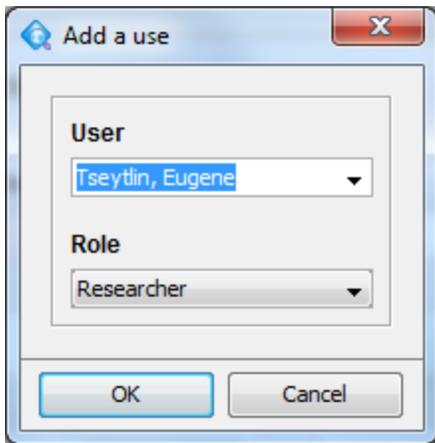
The main content area is titled "Test Protocol 2" and is divided into several sections:

- Study Information:** A form with fields for Title (Test Protocol 2), Abbreviated Name (TST2), and Type (Data & Tissue).
- Institution Memberships:** A section for the University of Pittsburgh with fields for IRB Approval No. (12345), Approval Date (02 / 11 / 2009), Expiration Date (Never Expires), PITT's Role (Owner), and Report Types Allowed (Pathology).
- User Memberships:** A table listing users and their roles, with a "PITT Access" column.

The left sidebar shows a list of studies, with "Test Protocol 2" selected. The table below shows the user memberships for the selected study.

Name	From	Role	PITT Access
Legowski, Elizabeth	University of Pittsburgh	Honest Broker	Approved
Dem... Cates	University of Pittsburgh	Primary Investigator	Approved

Add the users you just created to the Study in their designated roles.



Step 11: Representing Researcher - Search for Deldentified Reports

Still working in the test network, login as your Researcher using the temporary password. Change the password, remembering it for later. A good idea might be to consistently just add one letter to the original auto-generated password. Click "Pathology" in the reports type search criteria and return. The standard test corpus is 2500 documents all of which are Pathology. The query payload should match this number. Check a single document result to verify that most of the system is working.

Information in this panel indicates that all report meta-data was correctly processed

Multi Color text in Annotations view indicates coded concepts.

**NAME[YYY M XXX] indicates that DeID software is doing its job

Bolded section names indicate that TIES sectioning worked

Step 12: Representing Honest Broker - Search for Identified Reports

Still working in the test network, login as your HonestBroker using the temporary password. Change the password, remembering it for later. You will need to be inside your Organizational Intranet to see reports. But after issuing a query you should see reports that contain identified patient health information and contain no run message of the DeIdentifier. Since this is test data the names of the patients will be fictitious (e.g., John and Jane Doe.)

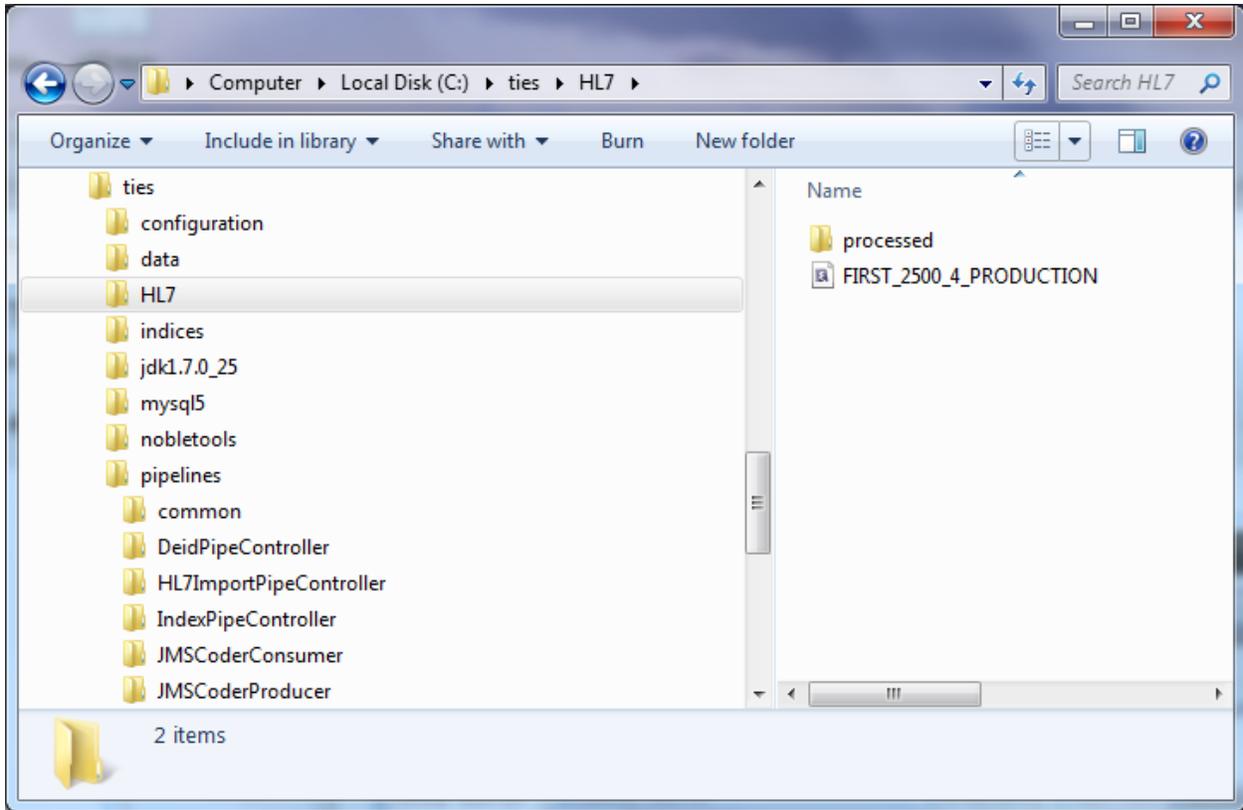
Step 13: Load and process your first batch of documents into Production

If all went well with your installation you should have a series of background processes running that represent individual phases of the TIES ETL process. Specifically you'll have a process for

- HL7Loader
- DeIdentifier
- Concept Coder
- Indexer

These processes are designed to always run. They poll for a change of state, do their work and then sleep for a predefined period. Change of state usually indicates that there are documents ready to be worked upon.

We assume your AP LIMS can output Pathology Report data in HL7 format. Separate a small but representative initial set of HL7 records into a separate file. Then copy this file into the HL7Loader input directory. The default location for this directory is here in the installation foot print.



It is set in

```
<TIES_INSTALL>/Pipelines/HL7ImportPipeController/classes/config/caTIES.properties.
```

Look for the attribute value pairs associated with the HL7ImportPipeController.

```
caties.hl7importer.directory.home = C:/ties/HL7  
caties.hl7importer.document.type = PATHOLOGY  
caties.hl7importer.sleepsize = 300000  
caties.hl7importer.ethnicity.cfg = config/EthnicityConfig.txt  
caties.hl7importer.gender.cfg = config/GenderConfig.txt  
caties.hl7importer.race.cfg = config/RaceConfig.txt  
#Uncomment following line to tag all incoming reports with the specified tags.  
#Tags cannot contain spaces or colons in their name.  
#caties.hl7importer.tag = testtag
```

Once the HL7Loader pipe is complete it will write the HL7 file into the processed directory.

Step 14: Test your Production Data by repeating steps 6 through 12 on the Production Network.

A small HL7 document of around 2500 reports should move through the process very quickly. Wait fifteen minutes to a half hour and try to query the production network just as you previously did on the test.

Step 15: Mark password for Reset and forward account information to Researcher and Honest Broker.

This is standard TIES procedure after you add a new user. The only difference here is that you have used these accounts to benchmark the installation process. This was necessary because TIES requires each study to have a Primary Investigator (Researcher) and an Honest Broker. We also discourage the use of fictitious user information polluting the production database. Thus the temporary delegation is one means to an end. Another solution might be to assign yourself as Administrator the additional roles of Researcher and HonestBroker and make two Studies to exercise the public and private data search and order set construction.

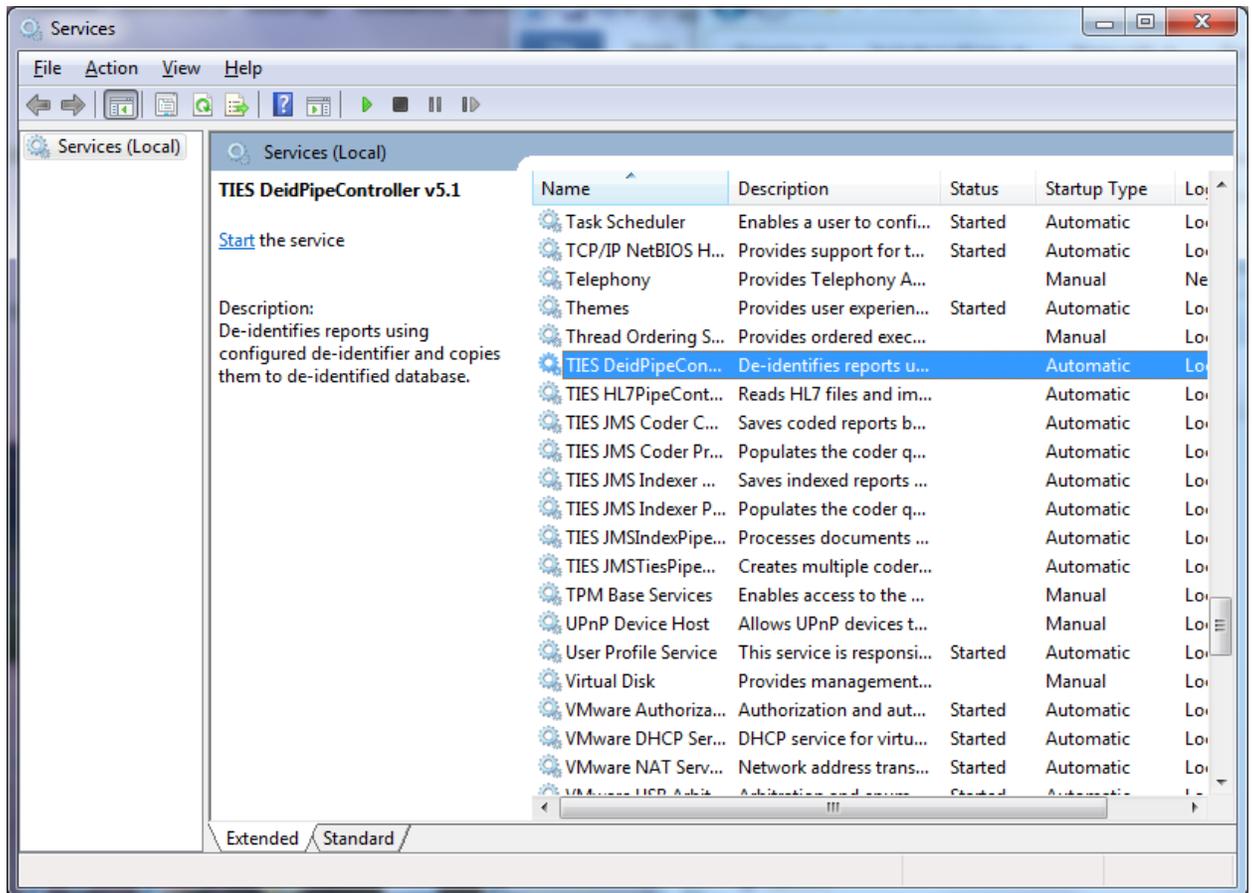
When the actual Research and Honest Broker log in for the first time they will be asked to change their passwords.

Trouble Shooting

If no reports are found it is likely that the data transformation was clogged in one of the pipes. To troubleshoot this situation there are a number of techniques and tools available.

Are Pipe Processors installed and running?

First check to see if the pipeline processors are installed and running. In Windows this can be accomplished via Control Panel -> All Control Panels -> Administrative Services -> Services.



All TIES service names are prefixed with "TIES". They should be started by the user who installed TIES initially. Essentially by you, the Administrator, and not an generic System account.

Did The HL7ImportPipeController process the initial HL7 file?

It should have been moved to the processed sub directory.

Have Document.ApplicationStatus and IdentifiedDocument.ApplicationStatus been set to IDLING?

The TIES acquisition phase is governed by a two MySQL relational databases. Check the status of ties_private.IDENT_DOCUMENT and ties_public.DOCUMENT to see that all Documents are present and in APPLICATION_STATUS = IDLING. You may use either the command line interface of MySQL, download the MySQL Workbench Visual Editor or use any available RDBMS tool like Squirrel.

```
select application_status, count(*) from document group by application_status;
```

State Transition for the ETL process should be as follows

Pipeline	State
HL7Loader	"LOADING"
DeIdentifier	"DEIDENTIFYING"
Coder	"CODING"
Indexer	"INDEXING"
Finished	"IDLING"

If the application_status of some documents never make it to IDLING there is typically an error in the process. Use log files and TIES support staff to help solve the issue.

Are the Pipeline Log files clear of errors and indicative of successful runs?

Each Pipeline has two log files in

<TIES INSTALL PATH>/pipelines/<PipeName>/logs/service.log and

<TIES INSTALL PATH>/pipelines/<PipeName>/logs/wrapper.log

Check these for diagnostics of a good run as well as any Java stack traces indicative of a failed run.

Does the Production Index contain files? The Indexer Pipeline builds a Lucene Index at the designated area.

This index should be a non empty directory of binary files.

Fixes

If it is determined that the production data transformation and load has failed you should

1. Examine start up account for the Windows Services
2. Examine the parameters in the caties.properties file in each pipeline footprint
3. Forward error messages and captured stack traces to TIES Support Staff.