PROTEXPRESS 1.0 DATA PORTAL

Local Installation Guide

NATIONAL® CANCER INSTITUTE

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Contents

Chapter 1 Introduction

This *protExpress 1.0 Installation Guide* provides you with the instructions to install and configure a fresh protExpress 1.0 application and the grid service. The protExpress installation installs and configures an Apache Tomcat instance, the web application and the grid service, and creates a protExpress-specific schema on a pre-existing database on a pre-installed PostgreSql 8.3.x database server. An upgrade of protExpress reinstalls the web application and grid service. If the grid service was not installed as part of installation, it can be installed during an upgrade.

Instructions are given in this document for both Linux and Windows operating systems.

NOTE 	Published protExpress development documentation can be found on the protExpress page of the NCICB web site: http://protexpress.nci.nih.gov/

Overview of protExpress Installation

The process for installing protExpress includes the following tasks described in this document:

1. Downloading and installing required software
2. Setting environment variables
3. Downloading protExpress 1.0 distribution files
4. Installing protExpress:
   a. Command-Line Method
      — Editing `install.properties` file
5. Upgrading protExpress
   b. Command-Line Method
      — Editing upgrade.properties file
6. Configuring JBoss servers and PostgreSql 8.3.xserver to run as a service
7. Post-Installation Tasks
   a. Updating Help Desk info in DB using SQL
   b. Using UPT to Add protExpress Users

Before You Proceed 	Once protExpress 1.0 has been installed, you should use the upgrade package for subsequent installs/upgrades of either the application or the grid service. Using the installer package again on the same database instance (specified in the properties file) will **OVERWRITE** existing data. **Please exercise caution.** You can use the installer package if you want to host multiple instances of the application and/or want to maintain different versions of the application independent of each other. In this scenario, please ensure there are no port number conflicts for Apache Tomcat and no overlap between the database properties exist.

Chapter 2 protExpress 1.0 Software and Technology Requirements

Tested Environment

The protExpress 1.0 installation has been tested on Linux Red Hat Enterprise Linux AS 4 64/32-bit (for AMD chipset) and the Windows XP/2003 environments. While the installation may work in other Linux and Windows environments, it has only been tested in these environments.

Required Software—Not Included in protExpress

Many of the servers and services that make up protExpress 1.0 are automatically installed as part of this installation. However, certain tools that you must manually install and configure are listed in Table 2-1 on page 4. The software name, version, description, and URL hyperlinks (for download) are indicated in the table.

Prior to the protExpress 1.0 installation, you must download and install the following tools and recommended versions in the order they are listed in Table 2-1 on page 4. Complete the directions for installing each, as directed on the corresponding website.

Required Software Name ***Version***	***Description***
Java 2 Platform Standard Edition 5.0 Update 11 (J2SE 5.0) http://java.sun.com/products/archive/j2se/5.0_11/ Be sure to download the correct Java SDK for your operating environment. For example, for Linux AMD 64, you would download `jdk-1_5_0_11-linux-amd64-rpm.bin`. For Windows, you might download `jdk-1_5_0_11-windows-i586-p.exe`.	The J2SE Development Kit (JDK) supports creating J2SE applications.
Apache Ant, 1.7.0 https://gforge.nci.nih.gov/svnroot/lsd/trunk/tools/apache-ant-1.7.0-bin.zip	Apache Ant is a Java-based build tool.
PostgreSql 8.3.x http://www.postgresql.org/download/ Be sure to download the appropriate pre-built binaries according to the targeted operating system.	PostgreSql is an open-source database software application.

Table 2-1. Required Software

Important!	As you install each application, record the installation directory path, and the hostname of your PostgreSql 8.3.x DB server, and the DB admin username/password. **This will be required for installing UPT**.

Java SDK Installation

When you install the Java SDK, you will be prompted to select the installation directory. Record the path, as this directory will be used when you set the environment variables.

Apache Ant Installation

Unzip the Apache Ant distribution files using a command line unzip tool or a zip utility, such as WinZip.

After extracting the zip, you must set the environment variables, described in the following section, so that Ant is available in the system PATH.

Apache Ant Environment Variables

As you install each application, record the installation directory path, and the hostname of your PostgreSql 8.3.x DB server, and the DB admin username/password. **This will be required for installing UPT**.

NOTE	
	The purpose of setting operating system environment variables is so that the Java SDK and Ant build tool are available to run from anywhere in the system.

Linux

To set the environmental variables in Linux, follow these steps:

NOTE	
	The `JAVA_HOME`, `ANT_HOME` and `PATH` environment variables are set in `/etc/profile`. You may need to create the variables, or modify them if they already exist.

Step	Action

1	As the root user, enter the following in the `/etc/profile` file. A PATH variable should already be created in this file, so be sure to define the JAVA_HOME and ANT_HOME export before the PATH export. Replace `<some_path>` with the correct path fragment for Java and Ant installations.
	
	`export JAVA_HOME=<some_path>/jdk1.5.0_11`
	
	`export ANT_HOME=<some_path>/apache-ant-1.7.0`
	
	`export PATH=$JAVA_HOME/bin:$ANT_HOME/bin:$PATH`

2	Log out and log back in so that the system recognizes your changes.

Verifying the Environment Variables in Linux

To verify that environment variables have been set correctly, follow these steps:

Step	Action
1	From the command line, enter: ***`echo $JAVA_HOME`*** ***`echo $ANT_HOME`*** Both of these commands should return the location where you installed these tools.

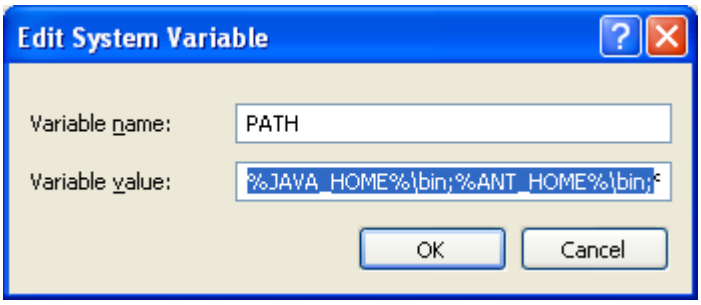
Step	Action
2	To verify your Java SDK installation, enter ***java –version*** from a command prompt. You should see `java version "1.5.0_11".`
3	To verify your Ant installation, enter: ***ant –version*** from a command prompt. You should see: `Apache Ant version 1.7.0 compiled on December 13 2006.`

Windows

To set the environmental variables in Windows, follow these steps:

NOTE	
	The JAVA_HOME, ANT_HOME and PATH environment variables are set in the Systems Properties.

Step	Action
1	In Windows, select **Control Panel**, then select the **Systems** application. In the Systems window, select the **Advanced** tab.
2	On the **Advanced** tab, click the **Environment Variables** button. To add a new system variable, select the **New** button. a. In the **Variable name** text box, enter ***JAVA_HOME***. b. In the **Variable value** text box, enter the location of your Java installation.
3	Click the **New** button again. a. In the **Variable name** text box, enter ***ANT_HOME.*** b. In the **Variable value** text box, enter the location of your Ant installation.

Step	Action
4	Select the PATH system environment variable, and select the **Edit** button. This opens the Edit System Variable dialog box, displayed here as an example. 
5	In the Variable value text box, prepend the following text in front of the text that already exists in the **Variable Value** field. ***%JAVA_HOME%\bin;%ANT_HOME%\bin;*** Click **OK**.

Verifying the Environment Variables in Windows

To verify the environment variables have been set correctly, follow these steps:

Step	Action
1	From the command line, enter: ***echo %JAVA_HOME%*** ***echo %ANT_HOME%*** Both of these commands should return the location where you installed these tools.
2	To verify your Java SDK installation, enter ***java –version*** from a command prompt. You should see `java version "1.5.0_11".`
3	To verify your Ant installation, enter ***ant –version*** from a command prompt. You should see: `Apache Ant version 1.7.0 compiled on December 13 2006`.

NOTES	
	Environment variables for protExpress and, optionally, UPT are modified and set in those sections of this document: • Installing a New protExpress 1.0, and • Downloading and Installing UPT (Optional)

Chapter 3 PostgreSql 8.3.x Installation and Configuration

A PostgreSql 8.3.x server must be downloaded, installed and running in order for the protExpress installation to work successfully.

To download and install the appropriate PostgreSql 8.3.x binary, follow the steps outlined on the PostgreSql 8.3.x website: http://www.postgresql.org/download/

TIPS 	• Record the PostgreSql 8.3.x root username/password chosen during the PostgreSql 8.3.x installation process. This will be needed when installing UPT (`database.system.user` and `database.system.password`. • Note the PostgreSql 8.3.x port chosen during the PostgreSql 8.3.x installation process, as you will need to use this as your `database.port` later in both the protExpress and UPT installation processes.

Once installed, you must configure the database for protExpress.

Database configuration

Once the database server is installed, a database should be created along with a user who has full access on the database to create object (tables etc).

Step	Action
1.	Connect to the database instance either through the command line or via the PostgreSql client. Execute the following statements **one by one in the correct sequence.**
2.	Create a new database: **create database [database_name];** where, **[database_name]** is the name of the database. **Make a note of this name as it will be used later in the installation.**

Step	Action
3.	Create a new user: **create user [db_username] with encrypted password '[db_pwd]';** where, **[db_username]** is the name of the database user, **[db_pwd]** is the password for the newly created user. **Make a note of the above values as they will be used later in the installation.**
4.	Set the newly created user as the owner of the database. **alter database [database_name] owner to [db_username];** where, **[database_name]** is the name of the database, and **[db_username]** is the name of the database user,

Chapter 4 Working with Properties Files

About Properties

An important component of command-line installation of either protExpress or UPT, is configuring properties files.

Prior to initiating a command-line installation, property variables must be modified. Note the following points about changing or entering variables.

Paths in Properties Files

NOTE 	The paths in the `.properties` files should use *forward* slashes. For example, you would use `application.base.path.windows=C:/apps/protExpress`, **not** `application.base.path.windows=C:\apps\protExpress-app`. If you use backslashes, you will experience undesirable results.

Spaces in Path Property Values

NOTE 	You should not specify paths with spaces included as property values. In Windows, note that the `C:\Documents and Settings\<username>` path contains spaces and should not be used, or anything similar. If you are using Windows, use a path such as `C:/apps/protExpress`. Spaces are fine for property values which do not represent a path.

More About Property Values

NOTES 	• In each `*.properties file`,, any property value marked with uppercase `REPLACE_*` must be manually updated with the appropriate value. • In each `*.properties file`, any property value marked with lowercase `replace_*` may be optionally updated with the appropriate value.

Chapter 5 Downloading and Installing UPT (Optional)

If you **do not already** have a User Provisioning Tool (UPT) installed, and you wish to manage user accounts for your protExpress application, you **must** install UPT.

Overview of UPT

- UPT is used to provision users in the protExpress application. Each application installs with its own Common Security Module (CSM) schema that has sample/default users and a role/permissions structure.
- To add additional users you must provision the protExpress application in the UPT. Then you can assign users to protExpress.
- UPT 3.2.0 installation file and User's Guide can be downloaded from the following URL: https://gforge.nci.nih.gov/frs/?group_id=327

Server Components Installed by UPT 3.2.0 installer	• The following components are installed and configured as part of 3.2.0 installation. You do not need to do anything further to download or install these components. o JBoss 4.0.x – Hosts the UPT application.

NOTE 	• Verify that default port values defined in `upt-install.properties` files are not in use on your system by running `netstat –a` from the command line. • The installer run pre-installation checks and fail the installation if ports the installer must use are in use. If the ports are in use prior to installation, you will need to stop any processes that are running. • The UPT installer installs an instance of JBoss 4.0.4.

PRE-REQUISITES	• UPT requires a MySql 5.0.x database to be pre-installed. MySql is an open-source database software application. • MySql 5.0.x can be downloaded from the URL: http://downloads.mysql.com/archives.php?p=mysql-5.0 • It is recommended to install version MySql 5.0.27 or above. • **IMPORTANT**- As MySql is installed, record the following values: o Installation Path o DB Server Hostname o DB Server Port o DB Admin User name o DB Admin User name and password. • It is **recommended** to create the following, and **record the values** for later use: o Database Name – Name for the UPT database in MySql. o Database user name – The username to access and create database objects in the UPT database. o Database user password – Password for the database user identified in the previous step.

To download and install the **UPT 3.2** files, follow these steps:

Step	Action
1.	Download the UPT 3.2.0 Installation Zip File (**upt_install_3.2.0.zip**) from the following location: Download URL: https://gforge.nci.nih.gov/frs/?group_id=327 **IMPORTANT**: Remember the download location as you will be using this file to run the installation in the steps that follow.
2.	From the directory where you downloaded the **upt_install_3.2.0.zip** file, unzip the files, using one of these two methods: a. Open a command prompt and use it to extract this file to a temporary location. a. For example, you may enter a command as below. You must have a ZIP tool installed. `unzip -q` **upt_install_3.2.0.zip** b. Use WinZip or a similar utility to unzip the files. **IMPORTANT**: Remember the location where the files were extracted. This location will be referred to as the **<UPT_INSTALLER_DIRECTORY>**.
3.	• Edit the properties file: **<UPT_INSTALLER_DIRECTORY>/install.properties**. • Update the values in the properties file, as appropriate. At a minimum, you will need to modify the values in the following table:

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>4.</td><td>
<table>
<tr><th>Environment Variable</th><th>Description</th></tr>
<tr><td><code>application.base.path</code></td><td>The location where you want to install UPT.

Example: In Windows, it could be <code>C:/apps/upt.</code> Linux users can use <code>${user.home}/apps/upt</code> or any other folder to which you have write permissions.

Important: This directory must be different than <UPT_INSTALLER_DIRECTORY> or the installation will fail.</td></tr>
<tr><td><code>authentication.type</code></td><td>The scheme used to login to UPT. Can be either of the following values:
ldap
db</td></tr>
<tr><td><code>database.server</code></td><td>This value must correspond to the domain name of machine that hosts the database server. You may need to consult your system administrator for this information.</td></tr>
<tr><td><code>database.port</code></td><td>This value must correspond to the port for the database server. 3306 is the default port, but check with your database administrator to be certain.</td></tr>
<tr><td><code>database.name</code></td><td>The name for the UPT database.</td></tr>
<tr><td><code>database.user</code></td><td>The name for the database user who can access and create objects in the UPT database.</td></tr>
<tr><td><code>database.password</code></td><td>Password for the above mentioned user.</td></tr>
<tr><td><code>ldap.url</code>
<code>ldap.basedn</code></td><td>LDAP related values. You may need to check with your sys admin for these.

Required if the authentication.type=ldap, else leave as blank.</td></tr>
</table>
Note: You shouldn't need to modify the other defaults values as we have chosen unique ports to reduce the risk of other applications using the same values. However, be sure to check the <code>install.properties</code> to verify that the ports in this file are not being used by other applications, otherwise you will experience problems.
</td></tr>
<tr><td>5.</td><td>From the command line, navigate to <UPT_INSTALLER_DIRECTORY>, and type <code>ant</code>. This runs the installation.</td></tr>
<tr><td>6.</td><td>To verify the UPT installation, go to:
http://<jboss.server.hostname>.<jboss.server.port>/upt

Refer to the <code>install.properties</code> for the correct values.</td></tr>
</table>

Step	Action
7.	After successfully installing UPT, make a backup of **<UPT_INSTALLER_DIRECTORY>/install.properties** in another directory for future reference.
8.	**IMPORTANT**: The default installation of UPT does not include the PostgreSql 8.3.x JDBC Jar File. This will have to be manually copied over to the Jboss directory. Details are below: Filename: **postgresql-8.3-603.jdbc3.jar** Download URL: https://gforge.nci.nih.gov/frs/?group_id=327 Copy To folder: **{application.base.path}/jboss-4.0.4.GA/server/default/lib**
9.	Stop the JBoss server. Restart the JBoss server.

Chapter 6 Installing protExpress 1.0 Application and Services

To newly install the protExpress 1.0 application and services, follow the steps in this section:

BEFORE YOU BEGIN 	• **Important**: There must already be a pre-existing PostgreSql 8.3.x DB and connection username/password for protExpress to install into; protExpress does not create its own DB.

Downloading protExpress 1.0 Files

To download the protExpress 1.0 files, follow this step:

Step	Action
1	Download the protExpress 1.0 Installation Zip File (**protExpress_Install_1.0..zip**) from the following location: Download URL: https://gforge.nci.nih.gov/frs/?group_id=327 **IMPORTANT**: Remember the download location as you will be using this file to run the installation in the steps that follow.

Server Components in protExpress 1.0	These server components are installed and configured as part of the protExpress 1.0 installation. You do not need to do anything further to download or install these components. • Apache Tomcat 5.5.20 (hosts both the protExpress application and grid service)

Installing a New protExpress 1.0 Instance

BEFORE YOU BEGIN 	• **Important**: The installation process deletes any existing data in the database. • If you do not want the re-initialize the data in the database, used the protExpress 1.0 Upgrade Package.

To install a new instance of protExpress 1.0 using the command-line, follow these steps:

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1.</td><td>From the directory where you downloaded the protExpress_Install_1.0.zip file, unzip the files, using one of these two methods:
b. Open a command prompt and use it to extract this file to a temporary location.
a. For example, you may enter a command as below. You must have a ZIP tool installed.
<code>unzip -q</code> protExpress_Install_1.0.zip
b. Use WinZip or a similar utility to unzip the files.
IMPORTANT: Remember the location where the files were extracted. This location will be referred to as the <INSTALLER_DIRECTORY>.</td></tr>
<tr><td>2.</td><td>• Edit the properties file: < INSTALLER_DIRECTORY>/install.properties.
• Update the values in the properties file, as appropriate. At a minimum, you will need to modify the below values:
<table>
<tr><td><code>application.install.path</code></td><td>The location where you want to install protExpress.
Example: In Windows, it could be <code>C:/apps/protExpress.</code> Linux users can use <code>${user.home}/apps/protExpress</code> or any other folder to which you have write permissions.
Important: This directory must be different than < INSTALLER_DIRECTORY> or the installation will fail.</td></tr>
<tr><td><code>application.build.node</code></td><td>A text string that denotes the location of the research center/lab/facility that is installing protExpress</td></tr>
<tr><td><code>tomcat.host.name</code></td><td>This value must correspond to the domain name of machine that hosts the application server. You may need to consult your system administrator for this information.</td></tr>
</table></td></tr>
</table>

Step	Action	
	`database.server`	This value must correspond to the domain name of machine that hosts the PostgreSql 8.3.x database server. You may need to consult your system administrator for this information.
	`database.port`	This value must correspond to the port for the PostgreSql 8.3.x database server. 5432 is the default port, but check with your database administrator to be certain.
	`database.name`	The name of the database. Example: **protExpress**
	`database.user`	The name for the database user who can access and create objects in the UPT database.
	`database.password`	Password for the above mentioned user.
	`mail.smtp.host`	SMTP Mail server for sending outgoing emails.
	`mail.smtp.port`	Outgoing email server port number.
	`ldap.install`	LDAP related values. Can be either of the following values: 1. true 2. false *If **ldap.install=true**, the following values must be provided:* *1. ldap.url* *2. ldap.basedn* *3. ldap.prefix*

<table>
<tr><th>Step</th><th colspan="2">Action</th></tr>
<tr><td></td><td>grid.install</td><td>Used to denote If the grid service installed or not: Potential values are:
1. true
2. false
If grid.install=true, then the following value MUST be provided:
1. grid.index.url – The grid index server URL.If the grid service is installed but the index server url is incorrect, an exception/error will be thrown when attempting to access the Grid Service. Refer to Appendix III for the correct Index Server url's.
If grid.install=true, it is RECOMMENDED that the following values be specified:
1. grid.researchCenter.displayName
2. grid.researchCenter.shortName
3. grid.contactPerson.firstName
4. grid.contactPerson.lastName
5. grid.contactPerson.affiliation
6. grid.contactPerson.addressLine1
7. grid.contactPerson.addressLine2
8. grid.contactPerson.stateProvince
9. grid.contactPerson.localityCity
10. grid.contactPerson.zip
11. grid.contactPerson.country
12. grid.contactPerson.emailId
13. grid.contactPerson.phone
14. grid.contactPerson.role</td></tr>
<tr><td>3.</td><td colspan="2">Record the property values you have set.
Note: You shouldn't need to modify the other default values as we have chosen unique ports to reduce the risk of other applications using the same values. However, be sure to verify that the ports in this file are not being used by other applications.</td></tr>
<tr><td>4.</td><td colspan="2">From the command line, navigate to <INSTALLER_DIRECTORY>, and type ant. This initiates the installation process. The anticipated duration is anywhere from 1-15 minutes, depending on your system's speed, power and memory.
The installer installs the protExpress schema in the specified pre-existing database on your PostgreSql 8.3.x server, and installs, configures, and starts an Apache Tomcat 5.5.20 server for both the protExpress application and the grid service.</td></tr>
</table>

Step	Action
5.	To verify protExpress installation, open your web browser to http://<tomcat.host.hostname>.<tomcat.host.port>/protExpress (example; http://xyz:28080/protExpress/ where, **xyz** is the tomcat hostname, and **28080** is the port that tomcat is running on.
6.	After successfully installing protExpress, make a backup of the **<INSTALLER_DIRECTORY>/install.properties** file in a different directory for future reference.

Reinstalling/Upgrading protExpress 1.0

You may want to upgrade protExpress 1.0 in either of the two situations:

1. Certain files are corrupted in the installation, and you want to re-install the application.
2. You may not have installed the grid service before, and want to install it now.

To perform an upgrade to protExpress 1.0 using the command-line, follow these steps.

Step	Action	
1.	From the directory where you downloaded the **protExpress_Upgrade_1.0.zip** file, unzip the files, using one of these two methods: a. Open a command prompt and use it to extract this file to a temporary location. a. For example, you may enter a command as below. You must have a ZIP tool installed. `unzip -q` **protExpress_ Upgrade _1.0.zip** b. Use WinZip or a similar utility to unzip the files. **IMPORTANT**: Remember the location where the files were extracted. This location will be referred to as the **<INSTALLER_DIRECTORY>**.	
2.	• Edit the properties file: **< INSTALLER_DIRECTORY>/upgrade.properties**. • Update the values in the properties file, as appropriate. At a minimum, you will need to modify the below values:	
	`application.install.path`	The location where you want to install protExpress. *Example*: In Windows, it could be `C:/apps/protExpress`. Linux users can use `${user.home}/apps/protExpress` or any other folder to which you have write permissions. **Important:** This directory must be different than **< INSTALLER_DIRECTORY>** or the installation will fail.

Step	Action	
	`application.build.node`	A text string that denotes the location of the research center/lab/facility that is installing protExpress
	`tomcat.host.name`	This value must correspond to the domain name of machine that hosts the application server. You may need to consult your system administrator for this information.
	`database.server`	This value must correspond to the domain name of machine that hosts the PostgreSql 8.3.x database server. You may need to consult your system administrator for this information.
	`database.port`	This value must correspond to the port for the PostgreSql 8.3.x database server. 5432 is the default port, but check with your database administrator to be certain.
	`database.name`	The name of the database. Example: **protExpress**
	`database.user`	The name for the database user who can access and create objects in the UPT database.
	`database.password`	Password for the above mentioned user.
	`mail.smtp.host`	SMTP Mail server for sending outgoing emails.
	`mail.smtp.port`	Outgoing email server port number.
	`ldap.install`	LDAP related values. Can be either of the following values: 1. **true** 2. **false** *If **ldap.install=true**, the following values must be provided:* 1. ***ldap.url*** 2. ***ldap.basedn*** 3. ***ldap.prefix***

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<tr><th>Step</th><th colspan="2">Action</th></tr>
<tr><td></td><td>grid.install</td><td>Used to denote If the grid service installed or not: Potential values are:
1. true
2. false
If grid.install=true, then the following value MUST be provided:
1. grid.index.url – The grid index server URL.If the grid service is installed but the index server url is incorrect, an exception/error will be thrown when attempting to access the Grid Service. Refer to Appendix C, "Grid Index Server URL" on page 28 for the correct Index Server URLs.
If grid.install=true, it is RECOMMENDED that the following values be specified:
1. grid.researchCenter.displayName
2. grid.researchCenter.shortName
3. grid.contactPerson.firstName
4. grid.contactPerson.lastName
5. grid.contactPerson.affiliation
6. grid.contactPerson.addressLine1
7. grid.contactPerson.addressLine2
8. grid.contactPerson.stateProvince
9. grid.contactPerson.localityCity
10. grid.contactPerson.zip
11. grid.contactPerson.country
12. grid.contactPerson.emailId
13. grid.contactPerson.phone
14. grid.contactPerson.role</td></tr>
<tr><td>3.</td><td colspan="2">Record the property values you have set.
Note: You shouldn’t need to modify the other default values as we have chosen unique ports to reduce the risk of other applications using the same values. However, be sure to verify that the ports in this file are not being used by other applications.</td></tr>
<tr><td>4.</td><td colspan="2">From the command line, navigate to <INSTALLER_DIRECTORY>, and type ant. This initiates the installation process. The anticipated duration is anywhere from 1-15 minutes, depending on your system’s speed, power and memory.
The upgrader upgrades , configures, and starts an Apache Tomcat 5.5.20 server for both the protExpress application and the grid service.</td></tr>
</table>

Step	Action
5.	To verify protExpress installation, open your web browser to http://<tomcat.host.hostname>.<tomcat.host.port>/protExpress (example; https://protexpress-dev.nci.nih.gov/protExpress/..
6.	After successfully installing protExpress, make a backup of the **<INSTALLER_DIRECTORY>/upgrade.properties** `file` in a different directory for future reference.

Chapter 7 Post-Installation Tasks

Using UPT to Add protExpress Users

To use the UPT, follow these steps:

Step	Action
1	Install UPT. For more information, see page 11.
2	Launch a browser and access UPT via http://<jboss.server.hostname>:<jboss.server.port>/upt (from UPT's `install.properties`).
3	*Login to UPT, using the following profile:* • *Login ID*=**`superadmin`** • *Password*=**`changeme`** • *Application Name*=**`csmupt`**
4	Select the **User** tab at the top of the page, and click **Create a New User**.
5	Enter **Login Name**, **User First Name**, **User Last Name**, **User Password**, **User Password Confirm**. Click **Add**.
6	On the **Application** tab at the top of the screen, click **Create a New Application**.
7	Enter the following parameters: • *Application Name* = **`protExpress`** • *Application Description* = **`<Application Description>`** • *Application Declarative Flag* = **`Yes`** • *Application Active Flag* = **`Yes`** • *Application Database URL* = *`jdbc:postgresql://${database.server}:${database.port}/${protExpress.database.name}`* • *Application Database User Name* = **`${protExpress.database.user}`** • *Application Database User Password* = **`${protExpress.database.password}`** • *Application Database Confirm Password* = **`${protExpress.database.password}`** • *Application Database Dialect* = **`org.hibernate.dialect.PostgreSqlDialect`** • *Application Database Driver* = **`org.postgresql.Driver`**

Step	Action
8	Click **Add** > **Associated Admins**. then select **Assign Admin**.
9	Highlight the user you want to be administrator of the application and then click **Assi Admin**.
10	Log out of UPT.
11	Login to UPT at http://<jboss.server.hostname>:<jboss.server.port>/upt. Use the follow login profile: • Login ID=<User created above> • Password=<Password for User created above> • Application Name=protExpress
12	Add users to the protExpress application like in the previous step.
13	Click **Logout**.

Update Configuration Parameters in the Database

The application stores certain configuration information in the database. It is recommended to update the values for the configuration parameters in the database. A brief description of the configuration parameters is provided in this section. These parameters are stored in a table named "**config_parameter**" in the database.

#	Configuration Parameters
1	Parameters relevant to Administration functionality: 1. SYS_ADMIN_EMAIL – Email Id for the system administrator 2. REGISTRATION_EMAIL_SUBJECT – The subject text for the automated email sent to a user upon completion of a successful registration request. 3. REGISTRATION_EMAIL_TO_USER_BODY_CONTENT – The text in the automated email sent to a user upon completion of a successful registration request. 4. REGISTRATION_SUCCESS_MESSAGE – The text displayed in the browser once a user successfully requests a new account. 5. FORGOT_PASSWORD_EMAIL_SUBJECT – Subject for the automated email sent when a user forgets their password and requests help. 6. FORGOT_PASSWORD_SUCCESS_MESSAGE – Text in the automated email sent to a user upon successful receipt of a forgot password help request. Parameters relevant to generation of a XAR file with appropriate LSID values: 1. LSID_AUTHORITY – Id for the authority, usually an internet domain name. 2. LSID_NAMESPACE_EXPERIMENT – Namespace identifier for the experiment. 3. LSID_NAMESPACE_RUN – Namespace identifier for the experiment run. 4. LSID_NAMESPACE_INPUT_OUTPUT – Namespace identifier for the input output objects. 5. LSID_NAMESPACE_PROTOCOL – Namespace identifier for the protocol in the generated xar file. 6. LSID_NAMESPACE_PROTOCOL_APPLICATION – Namespace identifier for the protocol application. 7. LSID_REVISION – A string denoting the version. For more information on LSIDs, refer to Appendix E, *Glossary* on page 30.

Appendix A Verification & Troubleshooting

Step	Verify	Verification Mechanism
1	Ensure Apache Tomcat 5.5.20 is running.	Launch a browser and access Apache Tomcat home page at the URL http://<tomcat.host.hostname>.<tomcat.host.port> where, **<tomcat.host.hostname>** and **<tomcat.host.port>** are the values specified in **<INSTALLER_DIRECTORY>/install.properties**
2	Ensure that the web application is up and running.	Launch a browser and access the web application at the URL http://<tomcat.host.hostname>.<tomcat.host.port>/protExpress where, **<tomcat.host.hostname>** and **<tomcat.host.port>** are the values specified in **<INSTALLER_DIRECTORY>/install.properties**
3	Ensure that the caCORE SDK generated web app (used by the grid service, if installed) is up and running. **NOTE**: This is only applicable if the Grid Service was installed, i.e. if **grid.install=true** in **<INSTALLER_DIRECTORY>/install.properties**	Launch a browser and access the application at the URL http://<tomcat.host.hostname>.<tomcat.host.port>/ProtExpressGridApp where, **<tomcat.host.hostname>** and **<tomcat.host.port>** are the values specified in **<INSTALLER_DIRECTORY>/install.properties**
4	Ensure that the Grid Service has been installed successfully **NOTE**: This is only applicable if the Grid Service was installed, i.e. if **grid.install=true** in **<INSTALLER_DIRECTORY>/install.properties**	Launch a browser and access the Axis wsrf page at the URL http://<tomcat.host.hostname>.<tomcat.host.port>/wsrf/services/cagrid/ProtExpressGridService where, **<tomcat.host.hostname>** and **<tomcat.host.port>** are the values specified in **<INSTALLER_DIRECTORY>/install.properties** If the page displays an error, ensure that an appropriate value was provided for **grid.index.url** property in **<INSTALLER_DIRECTORY>/install.properties**. For more information, refer to the section(s) above on installing a new protExpress instance and/or installing/upgrading protExpress.

Appendix B Default Data

The default installation of protExpress 1.0 creates a default user. This is to enable easy login access to the application. The user name and password are as below:

Username: **user1**
Password: **Pr0tu5@r!!**

This user is the owner/creator of three example experiments provided by default. Logging into the application with the above-mentioned username will display the three experiments.

Appendix C Grid Index Server URL

The index server URLs for Grid Service registration are:

- **Production Grid:** Available outside the NIH Firewall
  http://cagrid-index.nci.nih.gov:8080/wsrf/services/DefaultIndexService
- **QA Grid:** Available within the NIH network only
  http://cagrid-index-qa.nci.nih.gov:8080/wsrf/services/DefaultIndexService
- **Staging Grid:** Available within the NIH network only
  http://cagrid-index-stage.nci.nih.gov:8080/wsrf/services/DefaultIndexService
- **Training Grid:** Available within the NIH network only
  http://training03.cagrid.org:6080/wsrf/services/DefaultIndexService

Appendix D Contacting Application Support

NCICB Application Support	http://ncicb.nci.nih.gov/NCICB/support Telephone: 301-451-4384 Toll free: 888-478-4423

Appendix E Glossary

This glossary defines acronyms, abbreviations, and terminology used in protExpress.

Term	***Definition***
CPAS (Computational Proteomics Analysis System)	A web-based system built on the LabKey Server for managing, analyzing, and sharing high volumes of tandem mass spectrometry data. CPAS employs open-source tools provided by the Trans Proteomic Pipeline, developed by the Institute for Systems Biology.
Data	A data object refers to a measurement value or control value, or a set of such values. Data objects can be references to data stored in files or in database tables, or they can be complete in themselves. Data objects can be copied and reused a limitless number of times. Data objects are often generated by instruments or computers, which may make it important to keep track of machine models and software versions in the applications that create data objects.
Experiment	A grouping of experiment runs for the purpose of comparison or export. Currently an experiment run belongs to one and only one experiment, which must live in the same folder in CPAS.
Experiment Run	A series of experimental steps performed on specific inputs, producing specific outputs.
LDAP (Lightweight Directory Access Protocol)	An application protocol for querying and modifying directory services running over TCP/IP.
LSID (Life Science Identifier)	An emerging standard (http://www.omg.org/docs/dtc/04-05-01.pdf) by which biologically significant resources are uniquely named. LSIDs are multi-part strings with the parts separated by colons. They are of the form: `urn:lsid:<AuthorityID>:<NamespaceID>:<ObjectID>:<RevisionID>` The XAR format, supported by protExpress, uses LSIDs to identify entities such as inputs, outputs, and experiment and protocol definitions. However, protExpress does not use LSIDs to identify these entities in its database. protExpress generates LSIDs on the fly when exporting an experiment into the XAR format.
Material	A material object refers to some biological sample or processed derivative of a sample. Examples of material objects include blood, tissue, protein solutions, dyed protein solutions, and the content of wells on a plate. Materials have a finite amount and usually a finite life span, which often makes it important to track measurement amounts and storage conditions for these objects.
protExpress	A proteomics experiment and protocol data management tool that you can use to search and administer proteomics experiment and protocol data through online forms
Proteomics	Large-scale study of proteins, particularly their structures and functions
Protocol	A description of how an experimental step is performed. A Protocol object describes an operation that takes as input some Material and/or Data objects, and produces as output some Material and/or Data objects. In protExpress, a protocol is a reusable entity that can be associated with any experiment.
Protocol Application	The application of a protocol to some specific set of inputs, producing some outputs. A protocol application belongs to an experiment run, whereas protocol objects themselves are often shared across runs. When the same protocol is applied to multiple inputs in parallel, the

Term	Definition
	experiment run will contain multiple protocol applications object for that protocol object. Protocol applications have associated parameter values for the parameters declared by the protocol.
XAR File	A compressed, single-file package of experimental data and descriptions. A XAR file expands into a single root folder with any combination of subfolders containing experimental data and settings files. At the root of a XAR file is a xar.xml file that serves as a manifest for the contents of the XAR as well as a structured description of the experiment that produced the data.

Table 7-1. Glossary of terms relevant to protExpress

Index