RSNA Image Sharing Edge Server Installation/User Manual

1. Introduction: RSNA Edge Appliance

The Edge Appliance is the gateway device to enable the Image Sharing Network. This partnership of the RSNA with the NIH aims to deliver on 3 primary use cases:

a) patient initiated sends of their own imaging studies to the Clearing House for subsequent pickup by the patient via their PHR vendor (i.e. Microsoft HealthVault or http://www.lifeimage.com/)

b) clinician initiated sends of identified studies to another care center in the performing site's Affinity Domain

c) researcher initiated sends of anonimized studies from a source site, via the Clearing House, to a core lab in a multi-site research program

The last use case is not addressed with this release of the Edge manual. The next figure illustrates the workflow in the patient centric use case.

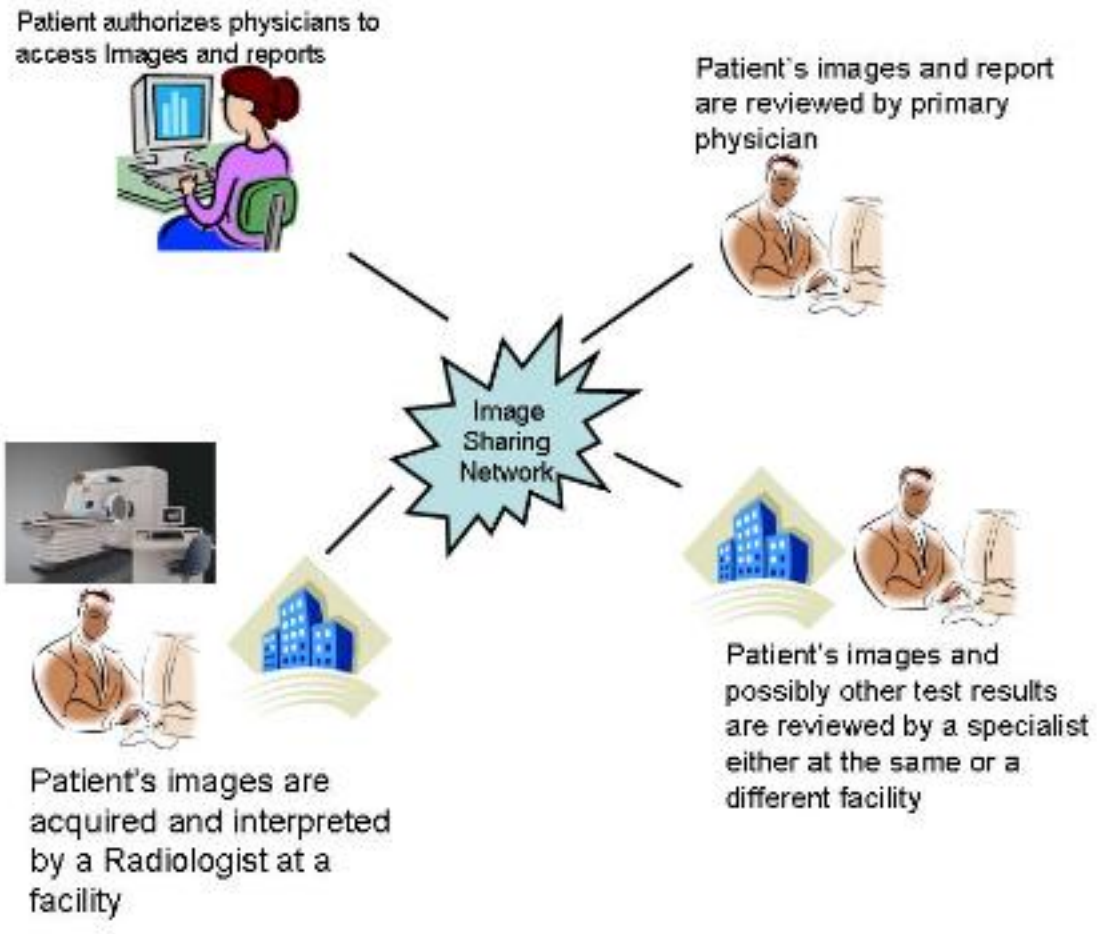

Figure 1-1: Image Sharing Workflow: Patient-centric Use Case

2. Hardware Requirements

The Edge Appliance software has been developed to run on standard desktop class PC hardware. However, experience will have to guide the provisioning of a system in any particular case. It is unlikely that the configuration for a 50 bed rural hospital performing 50,000 imaging studies per year would be adequate for a tertiary care center performing a million plus exams per year. There are also two possible methods to deploy the Edge software: a site may elect to download a Virtual Machine instance of the Edge Appliance (this is the easiest path for a site that already has a suitable virtual host) or it may also choose to deploy the software on a physical machine. In either case, a base-line configuration should contain:

a) at least a dual core, 2 GHz CPU
b) 4 GB of RAM
c) a 100 Mbps networking card
d) A 40 GB system disk and preferably a second data disk of 60 GB or more

3. Software Requirements

Networking

The Edge Appliance will need to communicate with several devices within the medical center (e.g. RIS and PACS). For these devices to "see" the appliance in predictable location, the Appliance will need at the very least a static IP address, and perhaps also a DNS name. Make sure these values are available at the time that the Appliance is being installed.

Fixed IP Address:
DNS Name:
Router/Gateway:
Net mask:

Virtual

As previously mentioned the Edge Appliance can be downloaded in a Virtual Machine (VM) format for running on a suitable environment. This is the least troublesome route to setting up a working Edge device. If a site lacks the required virtual environment, the following physical machine requirements come into play.

Physical

Operating System

Currently only Ubuntu Server 10.04 LTS (32 bit version) has been vetted for this Edge release

site http://www.ubuntu.com

Java

Currently Java 1.6 is required for this Edge release. We have vetted this release using *only* the official Oracle JRE (formerly Sun) version "1.6.0_24"

site: http://www.oracle.com/technetwork/java/javase/downloads

PostgreSQL

Currently version 8.4.7 is required for this Edge release

site: http://www.postgresql.org

4. Build Instructions

Virtual

Download the latest Edge VM (in OVF format) from here
xxxxxxxxxxx

Use your VM environment's OVF import tool to convert the OVF package into a VM on your current virtual host system. The following VM environments have been tested:

- VMWare Server, 2.0
- VMWare ESXi Server 4.x
- VMWare Workstation 7.x
- Xen Products using Hypervisor >V3.4,

Other OVF compliant hypervisors (such as Sun/Oracle VirtualBox) may also work. The default accounts/ password for Ubuntu are:

root **JGK7@@ba**
rsna **FT39bp#!**

The default postgreSQL account/passwords are:

postgres	N3K647A
mirth	1947JAT$
edge	d17bK4#M

The system will initially boot using DHCP for it's network address. This should be reassigned to the static IP and DNS name that was reserved for the Edge Appliance in Chapter 3. Change the network configuration for your environment from the Ubuntu menu System/Preferences/Network-Connections. Also, change the host entry in etc/hosts and make sure the IP matches the static IP assigned above. When complete jump to the chapter "Setting up MIRTH"

Physical

If for some reason you cannot choose the virtual machine path, the following route must be taken.

Installing Ubuntu

1. Use a web browser to connect to the Ubuntu web site: http://www.ubuntu.com

2. Select the ***Download*** control and then ***Download and install***
3. Select the 10.04 LTS release as shown in Figure 4-1. Follow the instructions provided on this page for creating a DVD and installing the operating system.
4. The Ubuntu installer will ask you to create at least one user account. Select an account that you will manage; that account will have sudo privileges. Other user accounts will be added as follows.
    a. The PostgreSQL installation will add a postgres account.
    b. The Edge Server installation will add an edge account.

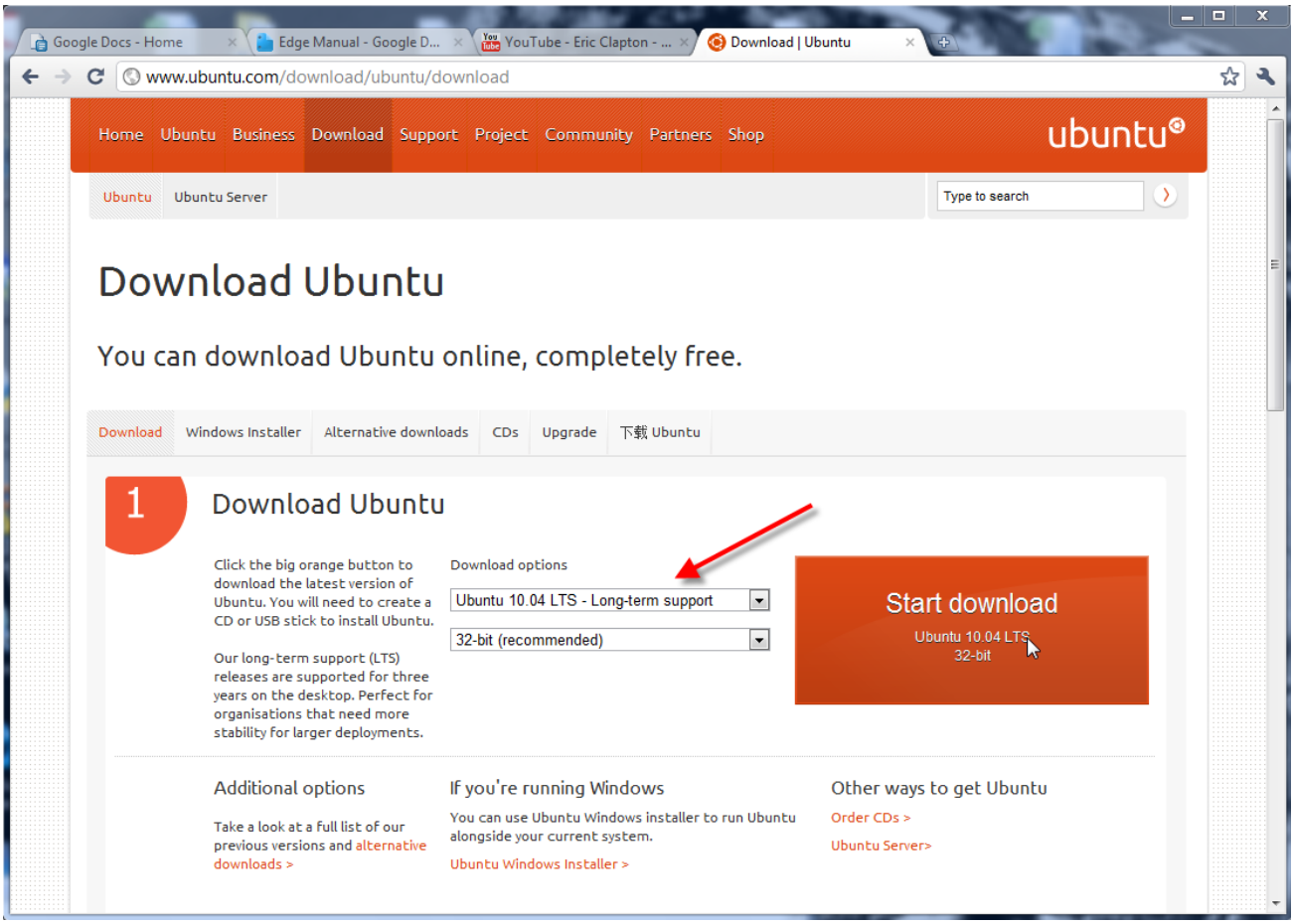

Figure 4-1: Ubuntu Download Page: Select Ubuntu 10.04 LTS

Installing Ubuntu Desktop

After you complete the base installation of Ubuntu Server, you will not have a desktop environment. You will need a desktop environment for installing the Edge Server. Login to the console using the account you created during the installation process. You will then install the Ubuntu desktop:

```
sudo su - root
apt-get install ubuntu-desktop
```

Change the root password so you can login to the console:

```
sudo passwd root
```

Reboot the system. This will enable the desktop software:

```
sudo reboot
```

Installing Java

Do not use the Java packages that are managed by the Ubuntu Software Manager. Manually download the Sun JRE found at http://www.oracle.com/technetwork/java/javase/downloads/index.html. We specify and test with the SE version of the Sun JRE; you do not need the EE version.

We install the JRE in ***/usr/local***; for example: /usr/local/jre_1.6.0_24. You may choose a different location. You will need to use the path to the JRE in configuration steps below.

Installing PostgreSQL

Install PostgreSQL using one of the two methods below.

1. From the command line (as root): **`apt-get install postgresql-8.4`**
2. Graphical User Interface (Ubuntu):
    a. Run the Ubuntu Software Center
    b. In the left tab, select Get Software (see Figure 4-2 below)
    c. In the search window (upper right corner of window), search for **postgres**
    d. Select and install **object-relational SQL database, version 8.4 server** (see Figure 4-4 below)

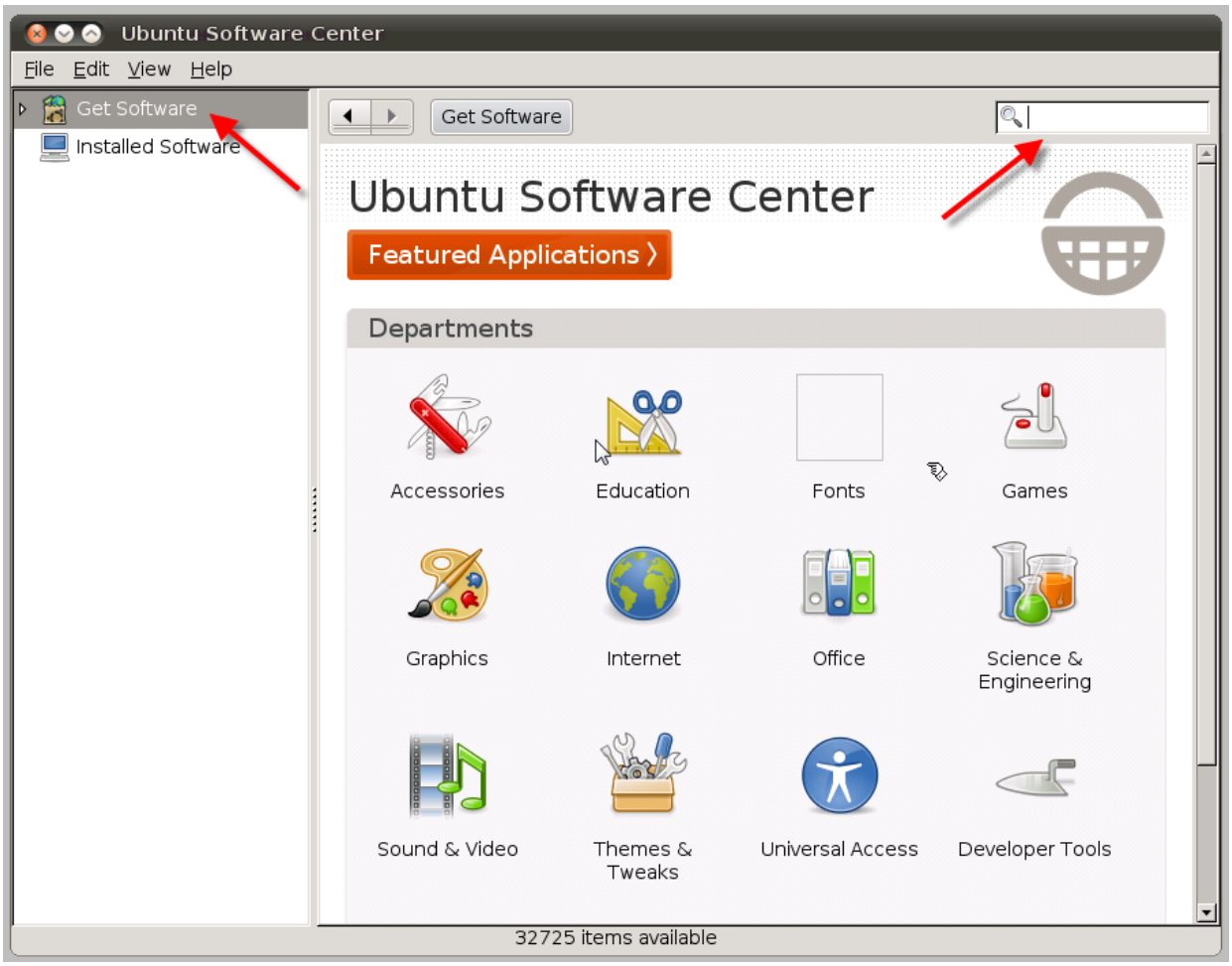

Figure 4-2: Ubuntu Software Center: Front Page

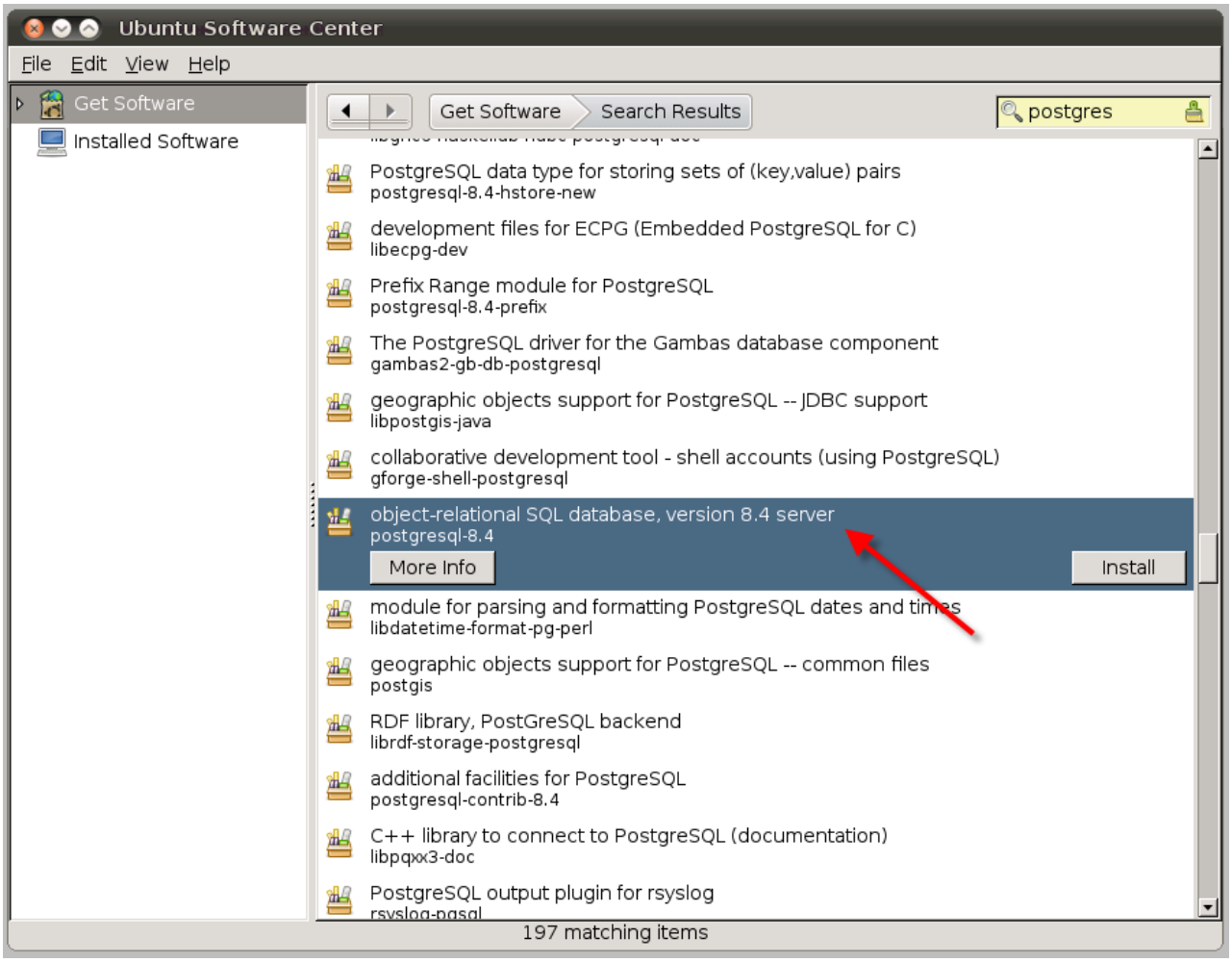

Figure 4-4: Ubuntu Software Center: Search for Postgres

After installation, create a password in postgres for the super user account. This account is typically the “postgres” account. For testing, we use the value N3K647A. Use a terminal window and run this command:

```
sudo -u postgres psql postgres
\password postgres
```

You are encouraged to choose a secure password that is different from our test password.

Operating System Environment

The default shell for the root account is */bin/bash*. The RSNA-Edge Installer will add the user account ***edge*** configured to use */bin/sh*. You need to change some system-wide settings to properly support the installer.

1. Edit the file ***/etc/environment***. If you have a new installation of Ubuntu Server, that file will contain one line that configures the PATH variable. Add the path to the java executable to this PATH variable. For example:
   - PATH=”/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/jre1.6.0_24/bin”
2. In the same environment file, add a variable that points to the installation folder for the Java Runtime Environment. For example:
   - JAVA_HOME=”/usr/local/jre1.6.0_24”
3. In the same environment file, add a variable for the path of the application installation. For example, if

installing the Edge server to /usr/local/edgeserver:

- RSNA_ROOT="/usr/local/edgeserver”

4. Edit the file /etc/login.defs. Find the two PATH lines that start ***ENV_SUPATH*** and ***ENV_PATH***. Add the path to the java executable to both PATH variables.
5. Reboot the computer to publish these variables throughout the system.

Running the RSNA Edge Installer

When running the installer, you will be asked for configuration information:

Database Superuser Password:	The password you entered for postgres above
Password for RSNA Database user:	Choose a (different) secure value for this user account For example: d17bK4#M
Password for Mirth Database user:	Choose a separate, secure database password for Mirth For example: 1947JAT$

Make sure that ***JAVA_HOME*** points to the installation folder of the Java JRE. We will lead you through the screen shots of the installation process.

```
$JAVA_HOME/bin/java -jar edgeserver-1.1.0-standard.jar
```

You can alternatively run the installer from the command line:

```
$JAVA_HOME/bin/java -jar edgeserver-1.1.0-standard.jar -console
```

The installer initially launches with a splash screen (Figure 4-5):

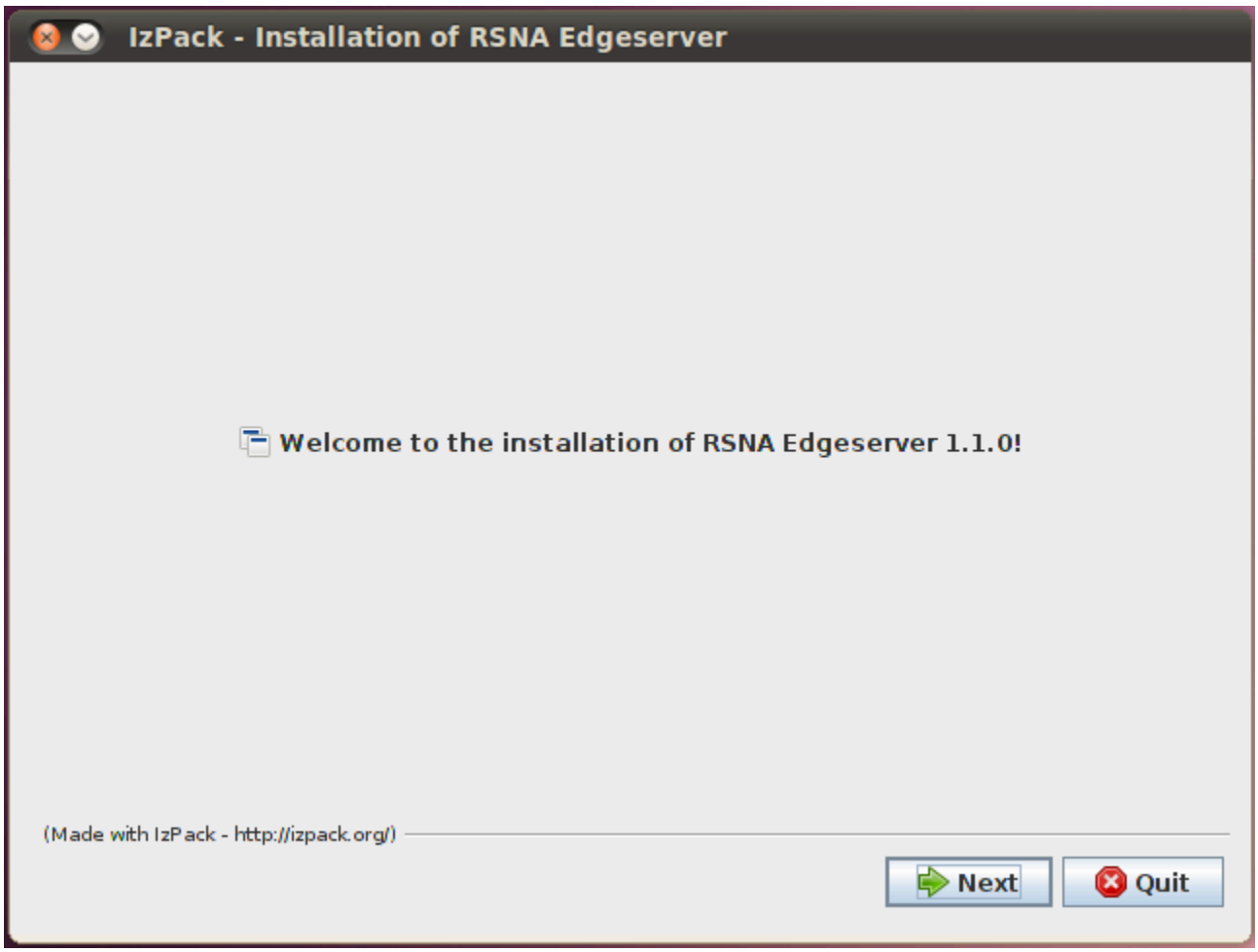

Figure 4-5: Installer splash screen

After the splash screen, you are prompted to select the installation path for the software (Figure 4-6):

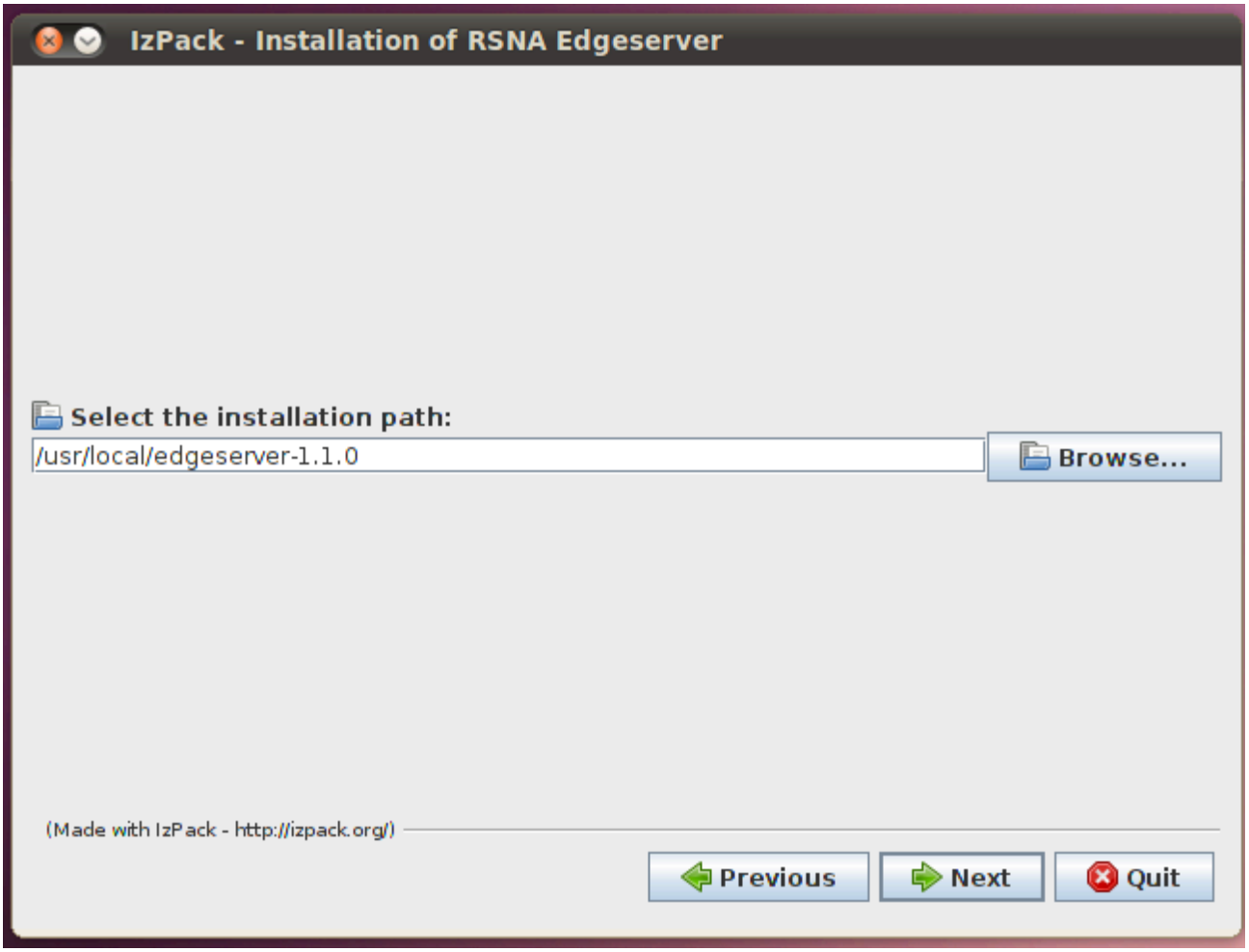

Figure 4-6: Installation Path

Next you will be prompted about which components to install (Figure 4-7). For new installations, the default options of all components should remain selected. For upgrade installations (see Chapter 8: Upgrades), you can safely de-select Glassfish, Mirth, and Generate Client Certificate.

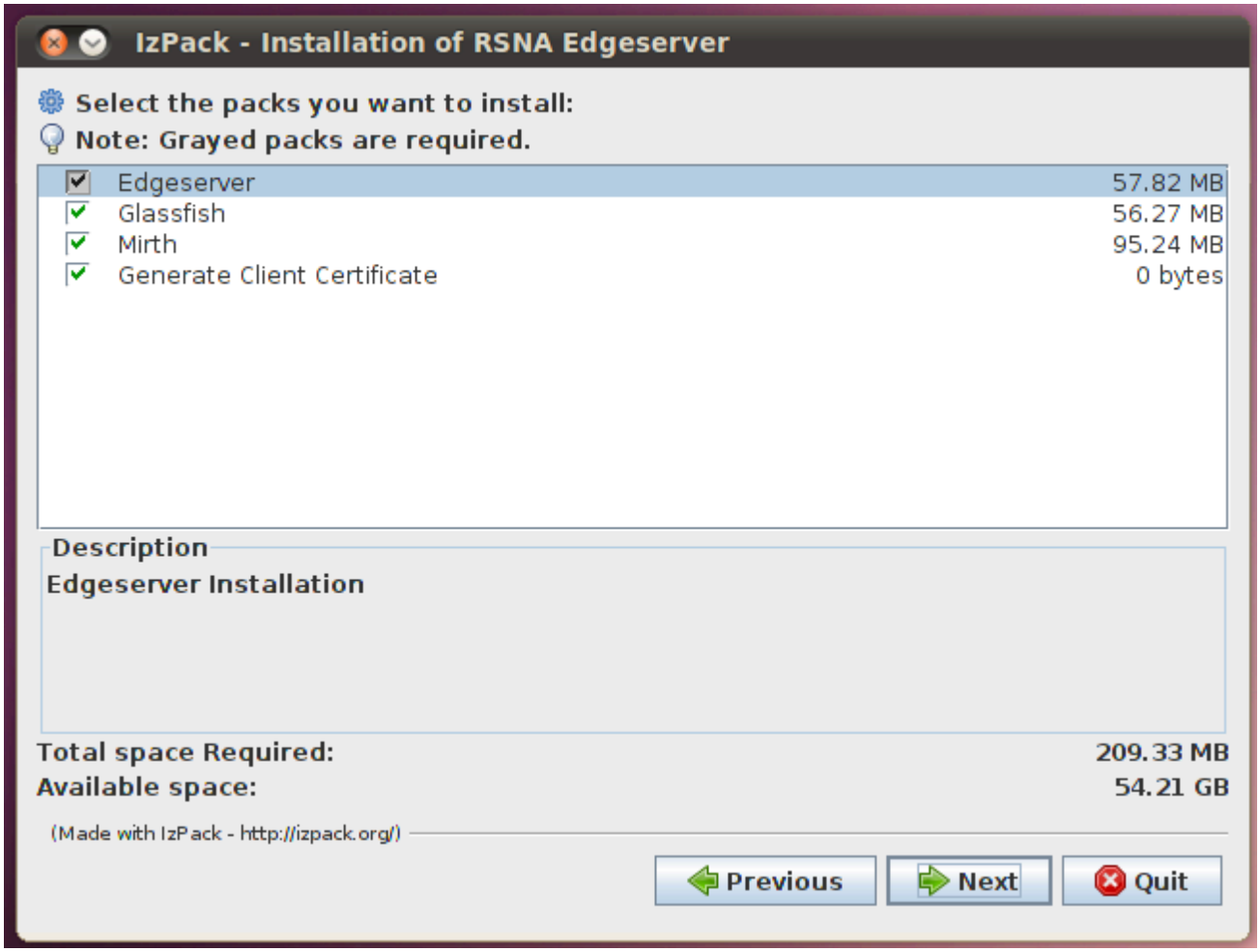

Figure 4-7: Component selection

Configure the database connection (Figure 4-8) using the credentials you created when configuring postgres. Additionally, this will create a role named “edge” that the applications will use, with a password of your choosing.

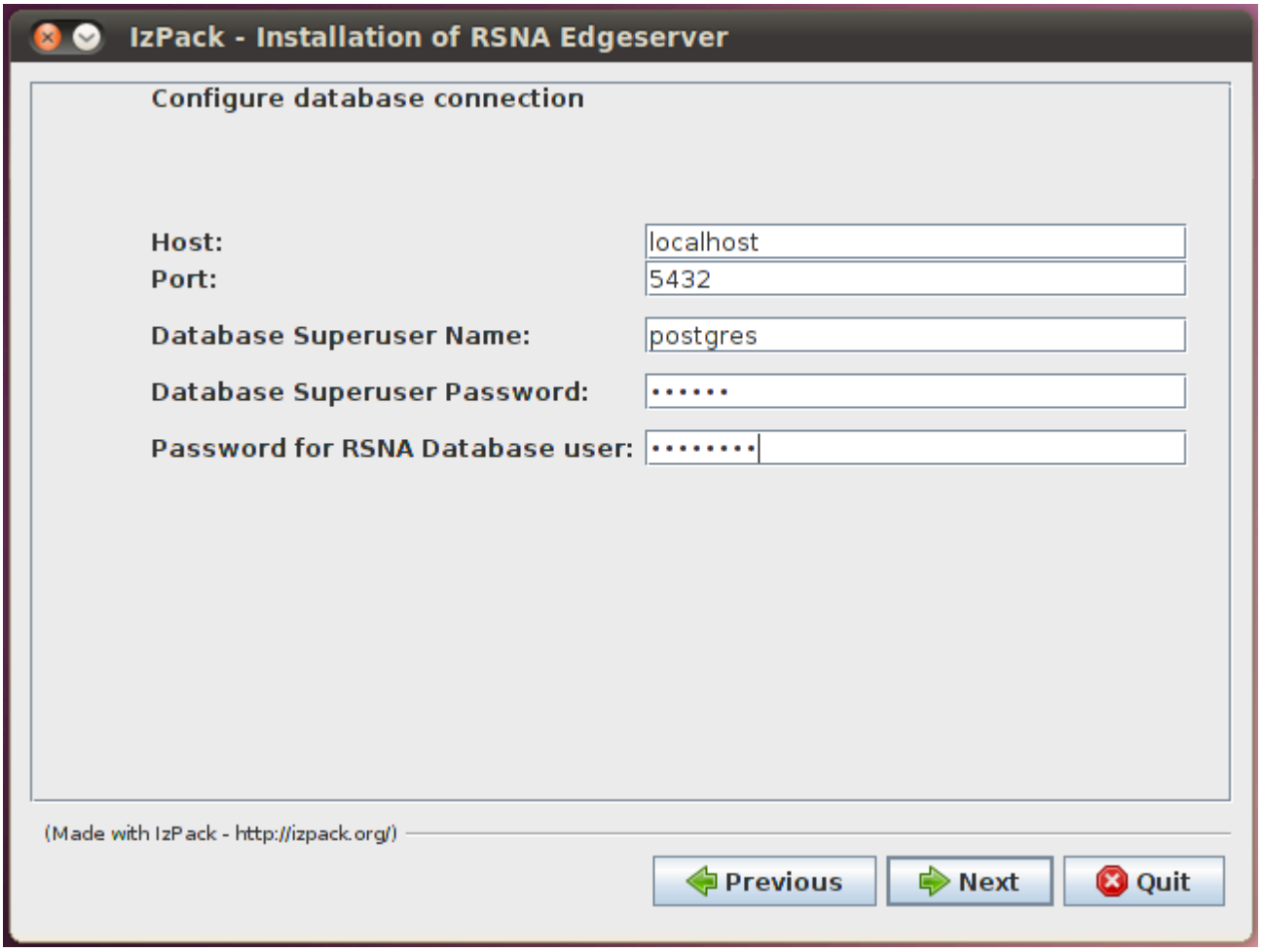

Figure 4-8: Application database configuration

If configuring Mirth, setup the database credentials (Figure 4-9), similar to the previous step.

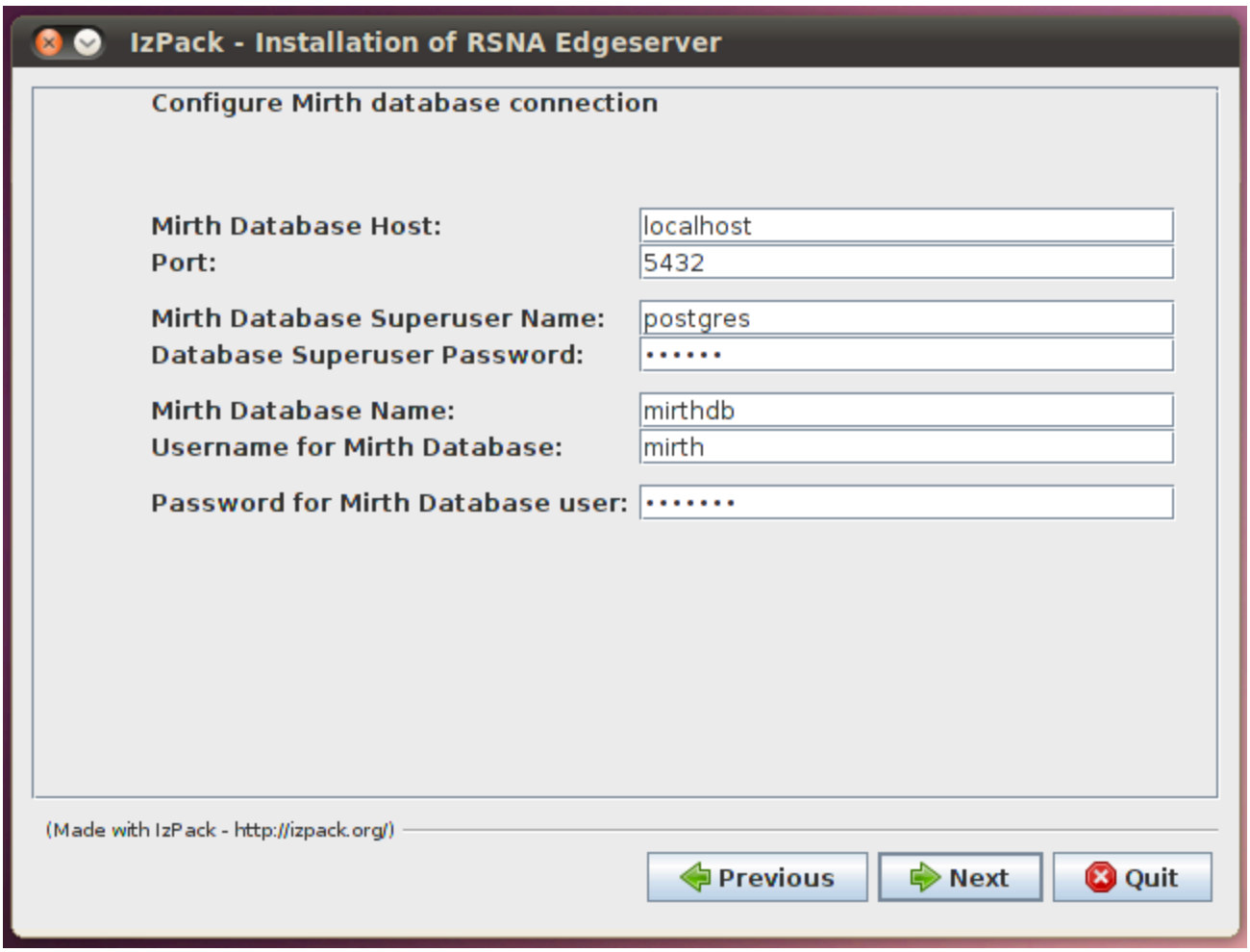

Figure 4-9: Mirth database configuration

If creating a certificate, fill out the certificate subject information (Figure 4-10). This will create a certificate, which is necessary to communicate with the Clearing House, and place it in the root application directory (specified above as the install path).

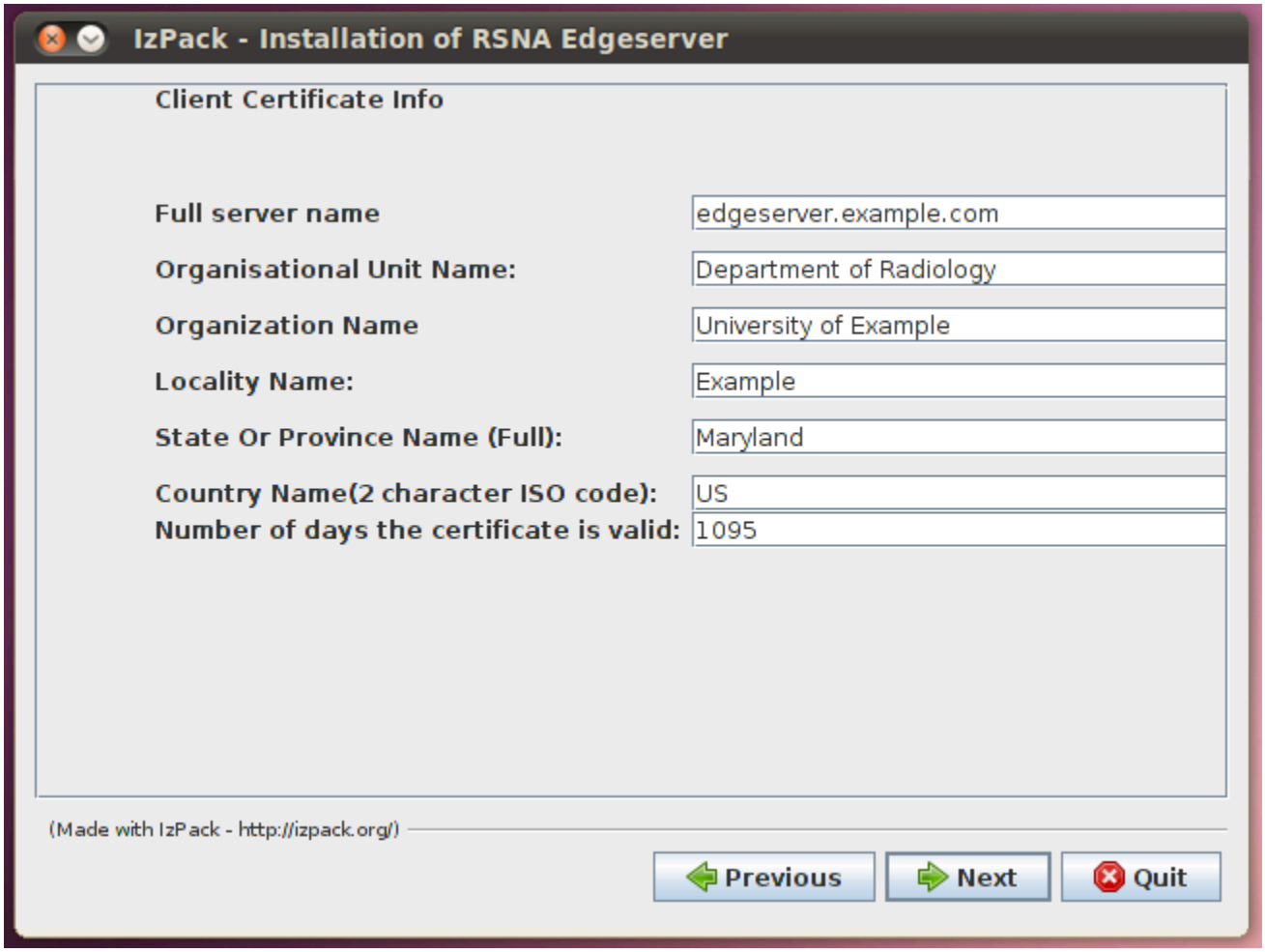

Figure 4-10: Certificate creation information

Before the installer begins to execute it's tasks, it presents a summary screen of what will be installed (Figure 4-11) and where, giving you one last chance to revise configuration settings before install.

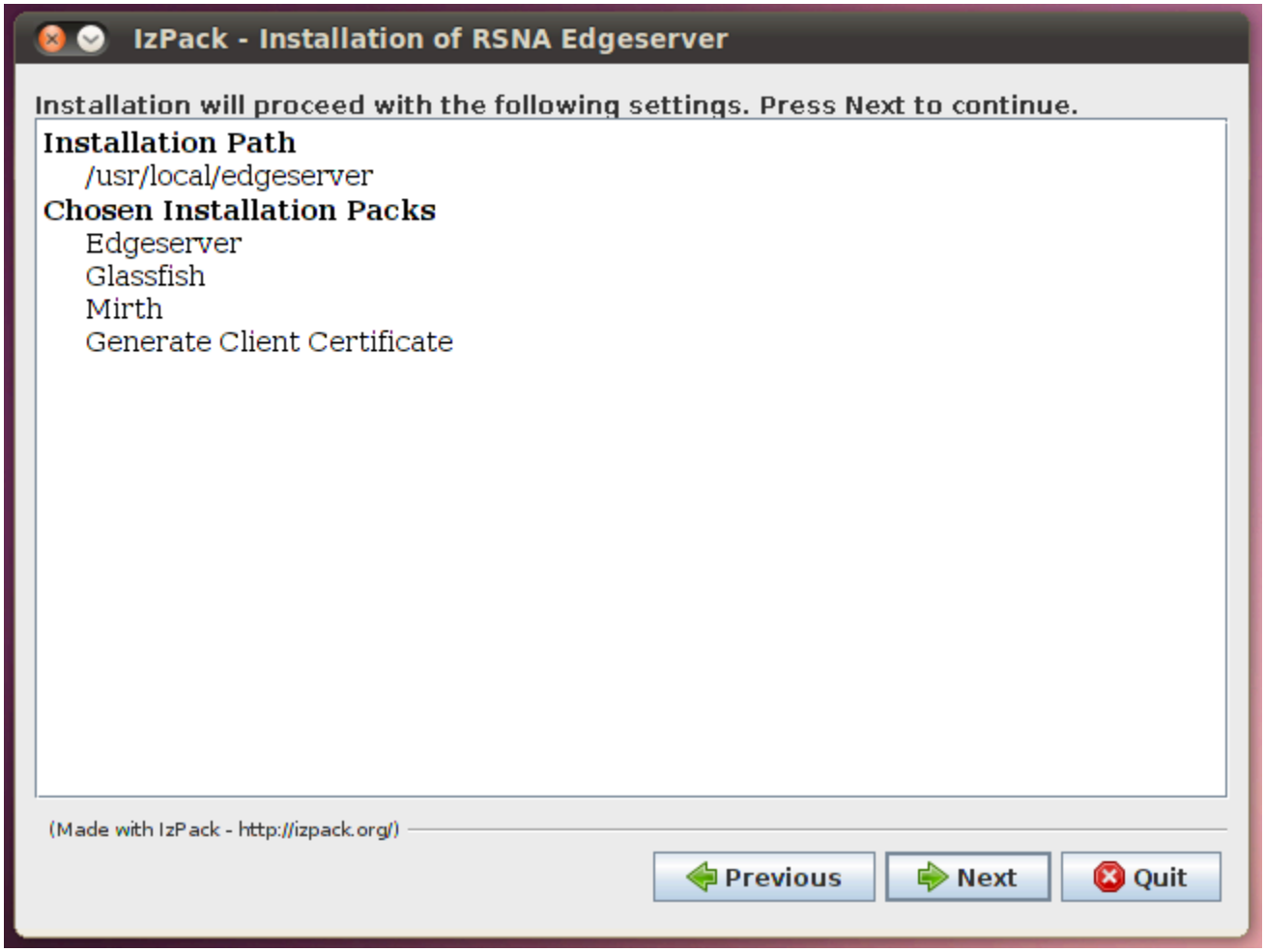

Figure 4-11: Pre-installation task summary

The installer will run through several screens, first setting up the Edge application (Figure 4-12) and then support applications (Figure 4-13). The final screen after installation has a “Done” button to click (Figure 4-14) which closes the installer.

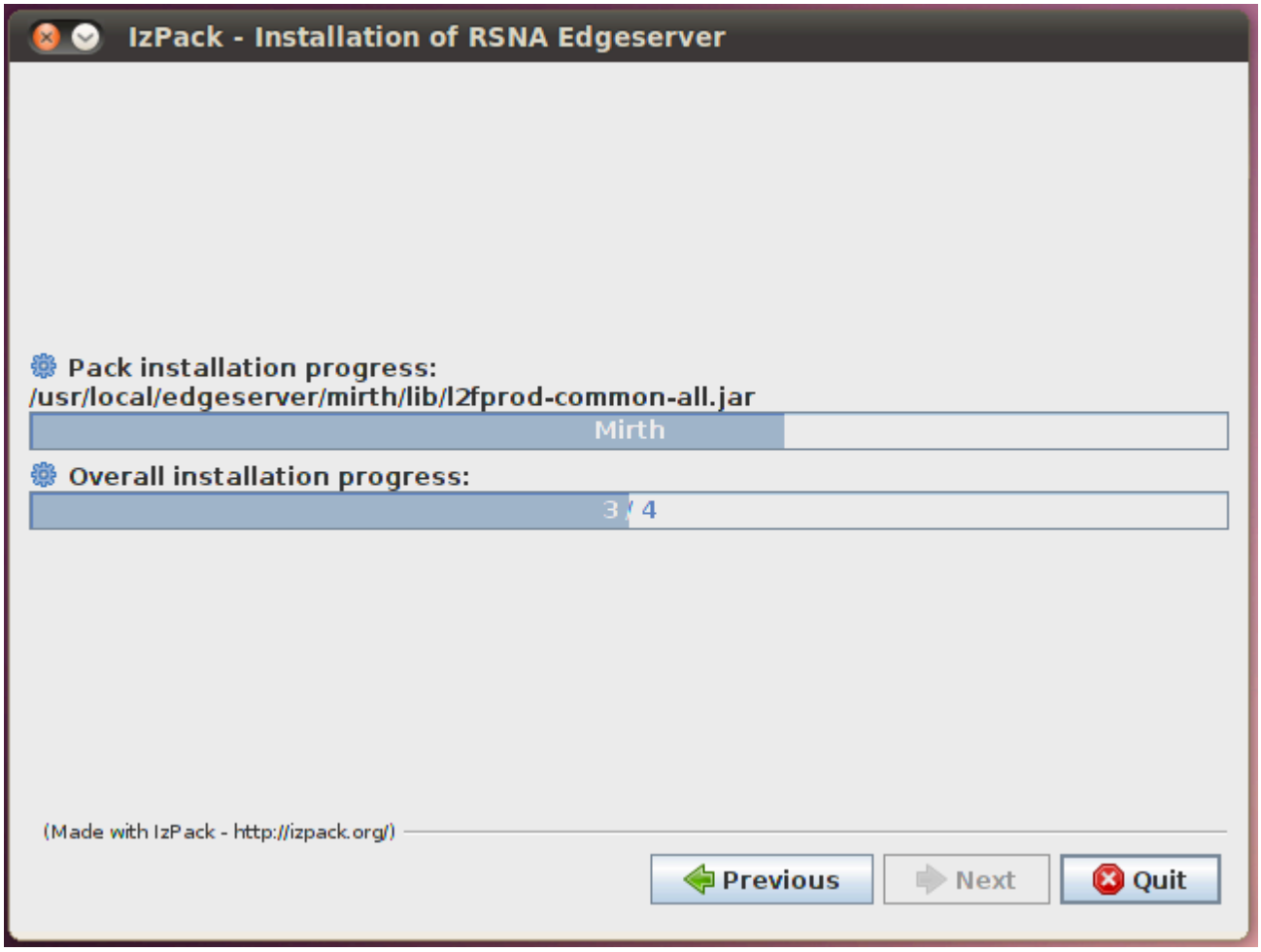

Figure 4-12: Edge server installation progress

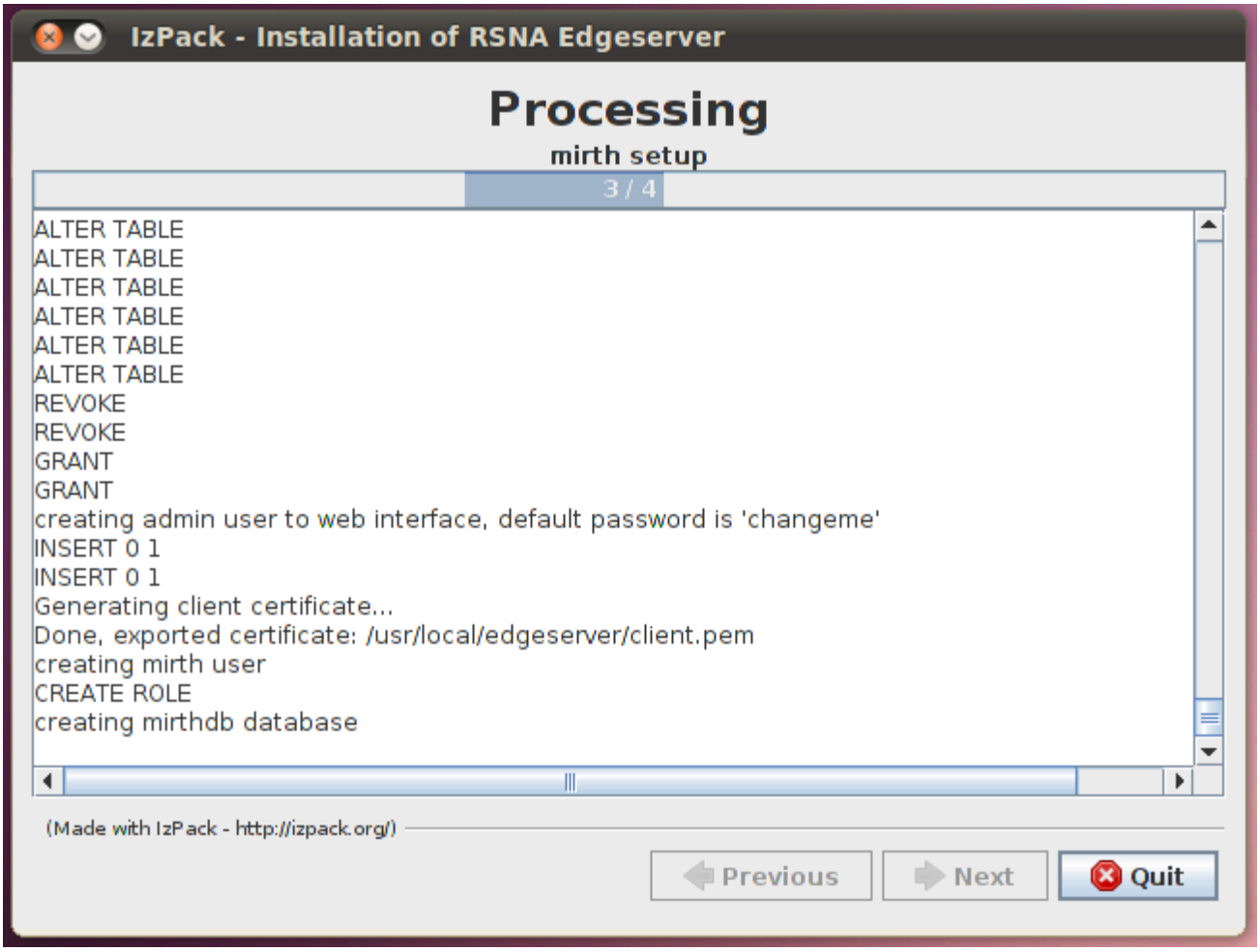

Figure 4-13: Application install progress

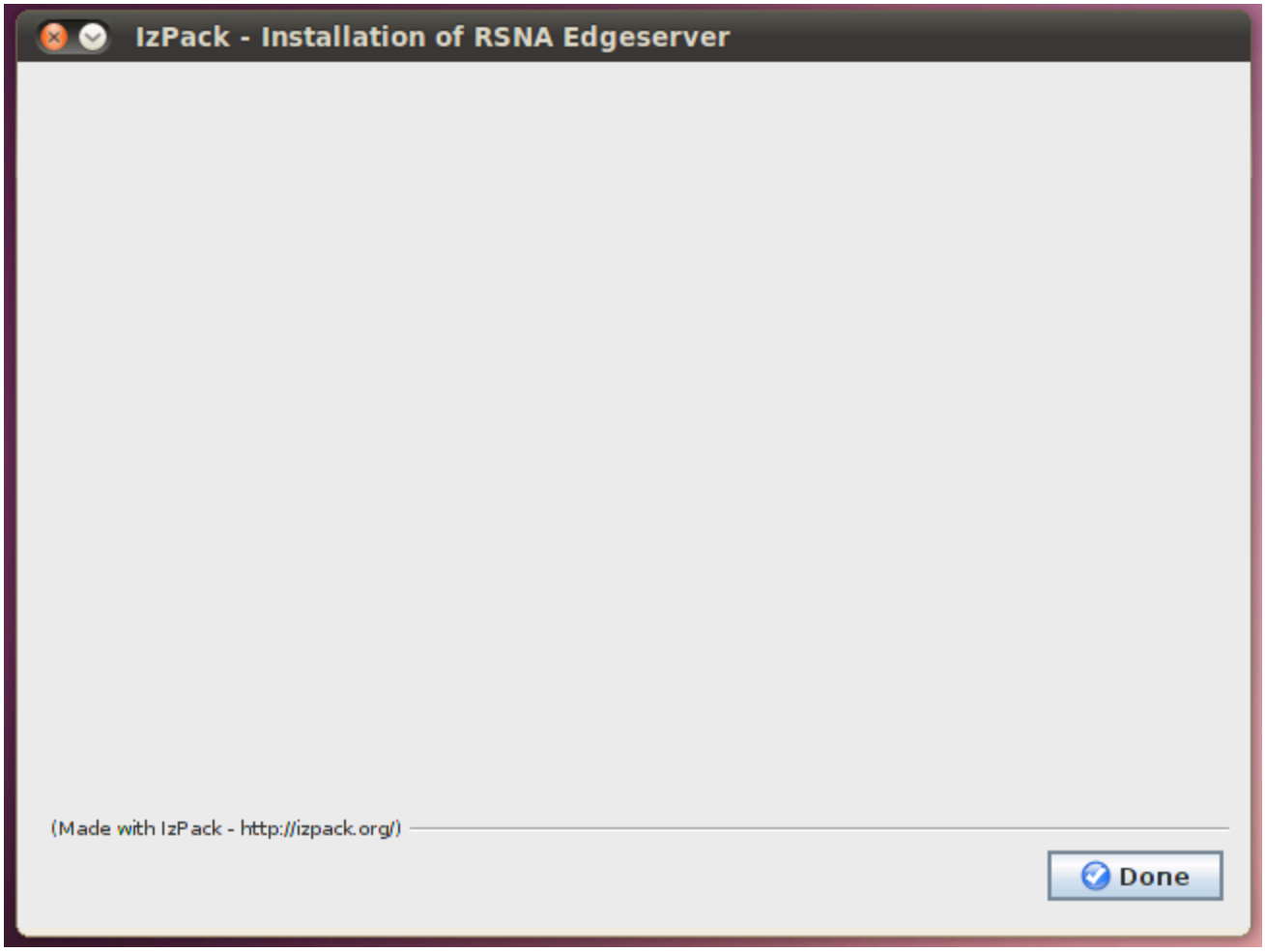

Figure 4-14: Installation complete

Configure the RSNA-Edge Device as an Ubuntu Service

From your command line window, run these steps as root:

```
update-rc.d edge-server defaults
```

Reboot the system. All Edge Server services should now be running.

Certificate Configuration with Clearing House

The Clearing House vendor needs a copy of the public key created when generating the certificate during installation. After you send this key, they will send you back a certificate which needs to be installed in order for communication between the Edge server and the Clearing House to happen. The vendor has issued the following instructions:

> In order for your institution's RSNA Edge Server to communicate to the lifeIMAGE Clearinghouse, security certificates must be exchanged between your institution and lifeIMAGE. Once these certificates are installed, your server can transfer patient exams to the lifeIMAGE Clearinghouse, for subsequent retrieval by the patients from their selected PHR. This document describes the steps required for initiating contact, and for getting your Edge Server tested against the Clearinghouse. In all, this process can be competed within a few days, once work has been scheduled and BAA is finalized.
>
> 1. Complete a BAA (Business Associates Agreement) with lifeIMAGE if this has not already been completed. Please contact David Wilkins to initiate this discussion. (dwilkins@lifeimage.com)
> 2. Generate a private / public key SSL certificates, per the guidelines below. Use of a third--party to sign your client certificates is not supported. The certificate you send to the lifeIMAGE Clearinghouse should be self--signed. You will need to generate a 2048 bit RSA key pair for your application. Your self-signed certificate should be valid for 730 days and is hashed with SHA256. You should make sure that the certificate subject reflects your own organization.
> 3. Send the public key (zip up the contacts into one file) to lifeIMAGE to both dwilkins@lifeimage.com and support@lifeimage.com
> 4. lifeIMAGE will acknowledge receipt of your public certificate and will provide the public key certificate of the lifeIMAGE Clearinghouse. The lifeIMAGE certificate can be installed following the guidelines in the RSNA Edge Server Implementation Guide.
>
> Once the above four steps are complete, a set of test exams should be sent from your RSNA Edge Server to the lifeIMAGE Clearinghouse. Provide a list of RSNA tokens, passwords, and DOB, along with exam details (modality, number of series and images) to lifeIMAGE so the transfer can be validated. You should follow the steps outlined in the Edge Server documentation on how to generate and send exams to the Clearinghouse. lifeIMAGE will confirm that all exams and images are received and correctly displayed. Once this is complete, your RSNA Edge Server is fully connected to the RSNA Image Share network.

To complete this process, launch a terminal on your Edge server installation and type the following commands:

```
sudo -s
cd $RSNA_ROOT
keytool -import -alias "edgeserver cert" -file client.pem -keystore conf/
keystore.jks
```

This will prompt you for the password to the Edge server keystore: **edge1234** and then install the client certificate generated during the installation (Figure 4-15).

Figure 4-15: Install Edge server certificate

Next, install the certificate you received from the Clearing House vendor, using the same password (**edge1234**):

```
keytool -import alias "life-image cert" -file life-image.pem -keystore conf/
truststore.jks
```

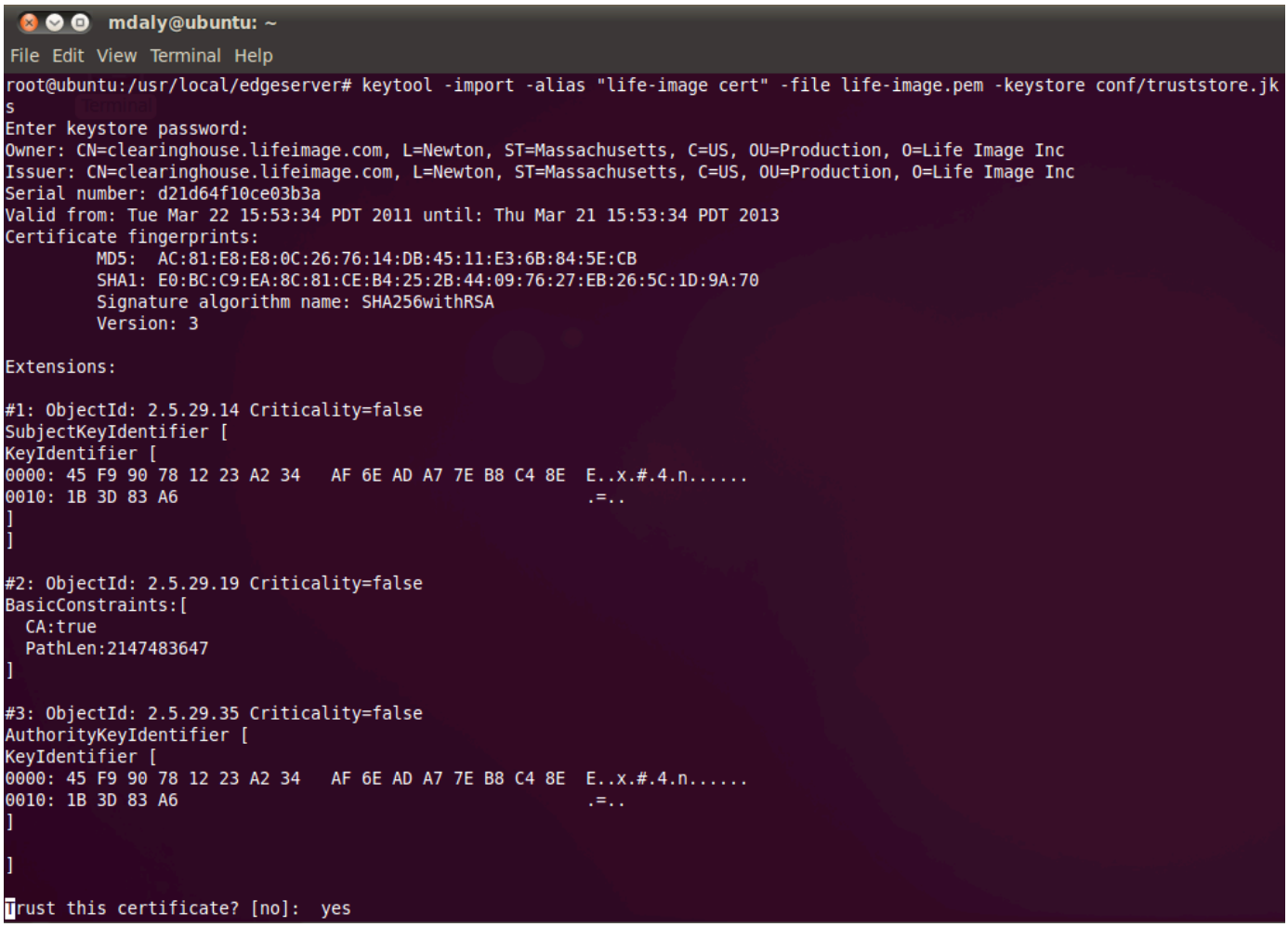

Figure 4-16: Install Clearing House certificate

Finally, you can verify the keystores (Figure 4-17). At this point in time, the Edge server can now communicate with the Clearing House, but additional configuration is necessary for it to receive data from the RIS and PACS.

```
keytool -list -keystore conf/keystore.jsk
keytool -list -keystore conf/truststore.jsk
```

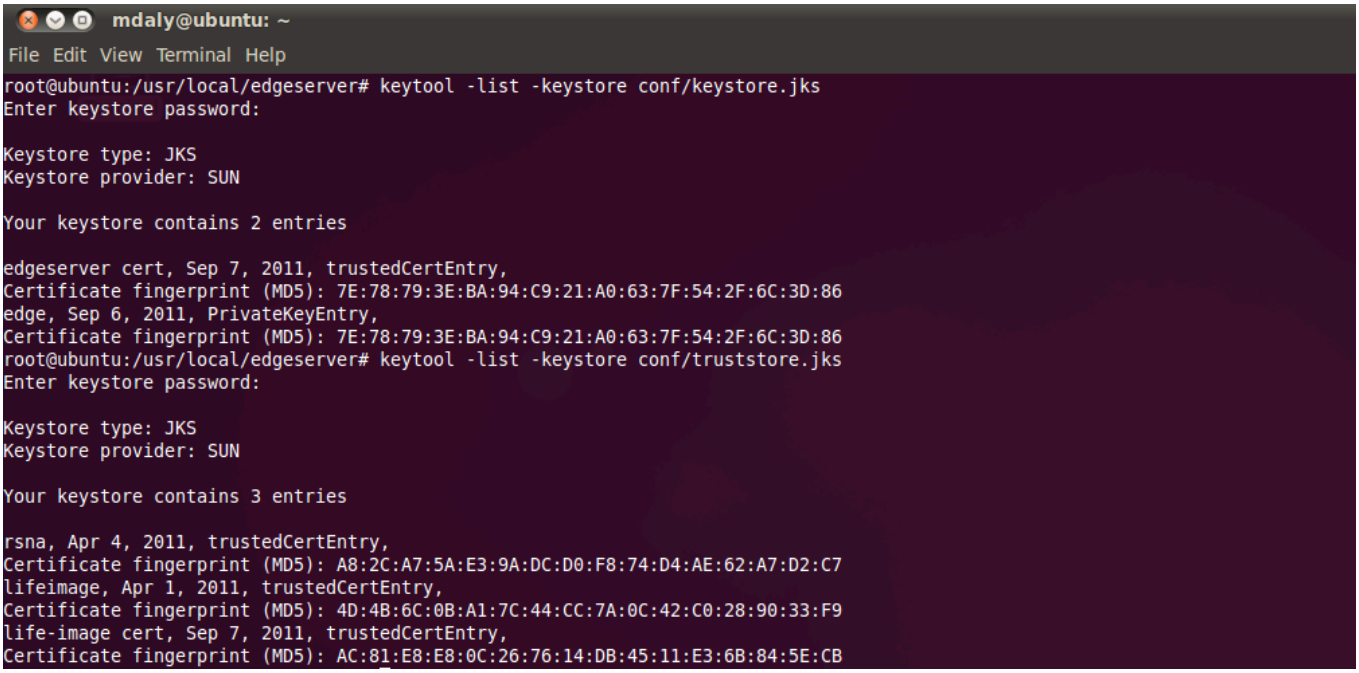

Figure 4-17: Certificate verification

5. Setting up MIRTH

Assumptions:

1. You have run the edge server installer (see above) which installs Mirth and configures it to use PostgreSQL as its database.
2. You have defined your HL7 message format and determined how they map to the edge server's database columns (see mappin spreadsheet).
3. That the edgeserver Web services are running. If you do not see the web page shown below, you may have to start the web services manually by typing ">/etc/init.d/edge-server start"

Setup:

1. MIRTH configuration is accomplished via a web interface; the web browser can be on either a remote machine or local on the Edge server. If remote, open the browser (IE 8 is best avoided) and navigate to: http://<address of edge server>:8080. If local, open FireFox and navigate to: http://localhost:8080. You should see a page similar to the one pictured below:

Figure 5-1: The Mirth Administrator Java Web Start page

2. Click the "Launch Mirth Connect Administrator" button. [Note: The first time this is done on the Edge server's local browser the path to the Java Web Start application is unknown. When FireFox asks what to use to open the file, select "other" on the drop down and navigate to Filesystem:/usr/local/jre-1.6-xx/javaws/javaws]. A Java Web Start app should launch and you should see the dialog pictured below:

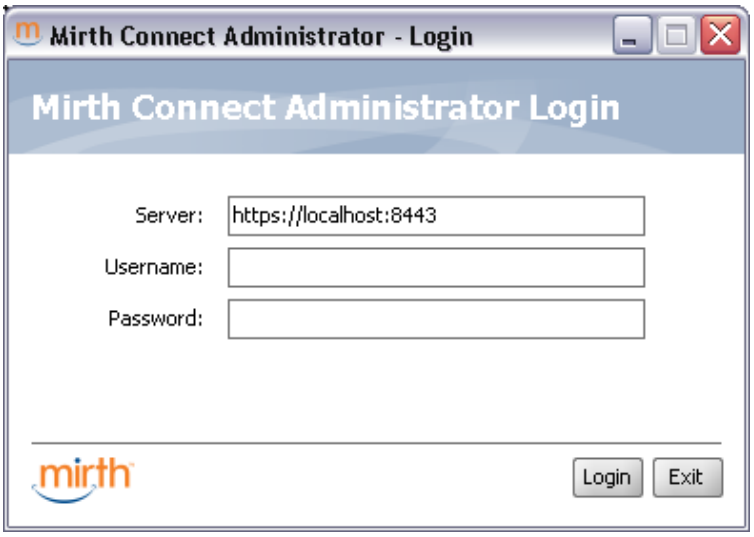

Figure 5-2: The Mirth Administrator login dialog

3. Login using username = “admin”, password = “admin”. After logging in you should see a screen similar to:

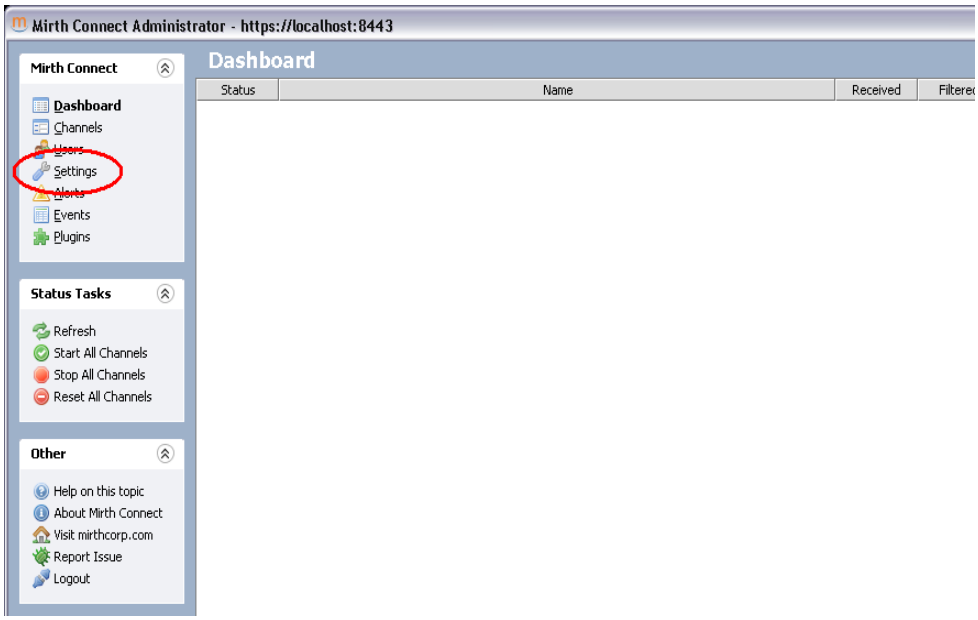

Figure 5-3: Mirth Administrator

4. You will first need to initialize the base Mirth setup. In the left column, click on the “Settings” link. You should see a screen similar to:

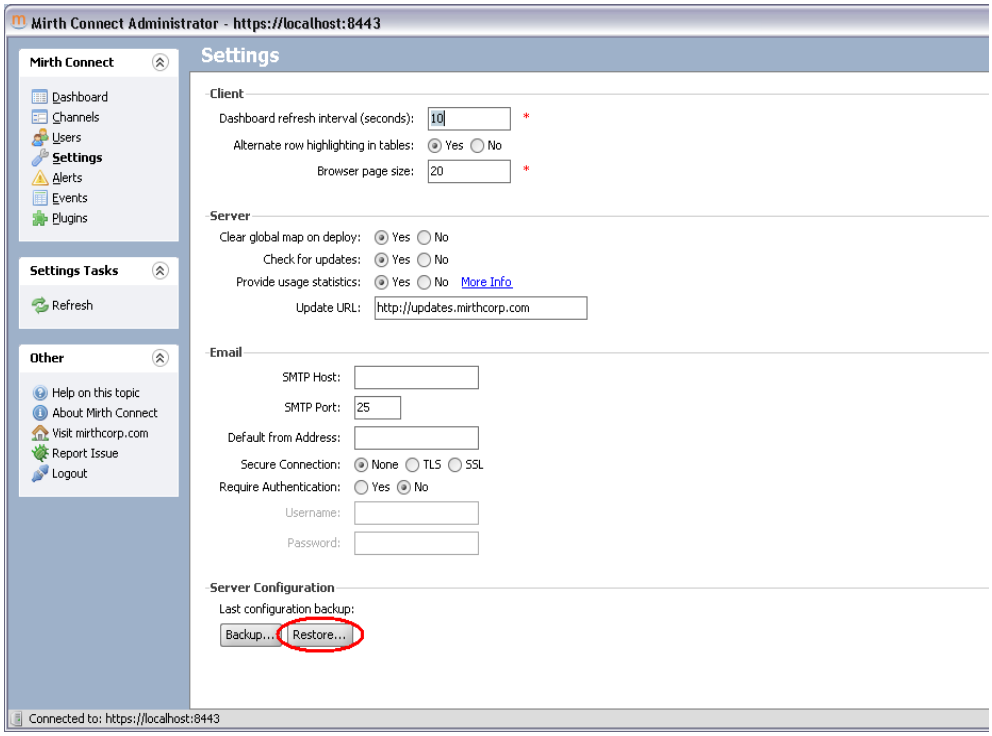

Figure 5-4: Installing the default Mirth configuration

5. Click the “Restore…” button at the bottom of the page and select the “Mirth Backup.xml” file located in the edge server installation directory (see Figure 4-7). You should get a message saying your configuration was successfully restored.
6. You will now need to configure the database connection password. To do so first switch “Channels” under the Mirth Connect heading on the left, then click the “Edit Code Templates” link under the “Channel Tasks” heading.
7. Then open the “Get Database Connection” template by double clicking on its entry. You should see the screen below.

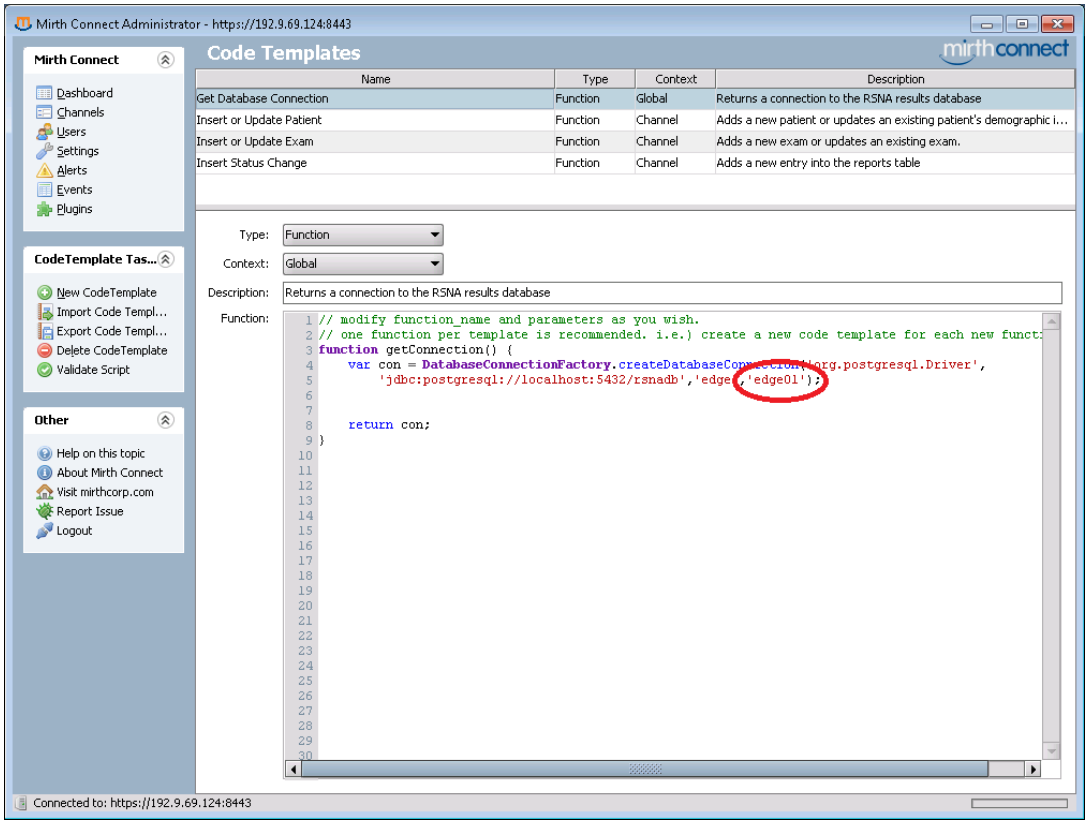

Figure 5-5: Configuring database connection parameters

8. Replace the fourth parameter with the password you defined for the RSNA database user.
9. Now switch to the channels page by click the “Channels” link in the left column. You should see the screen pictured below:

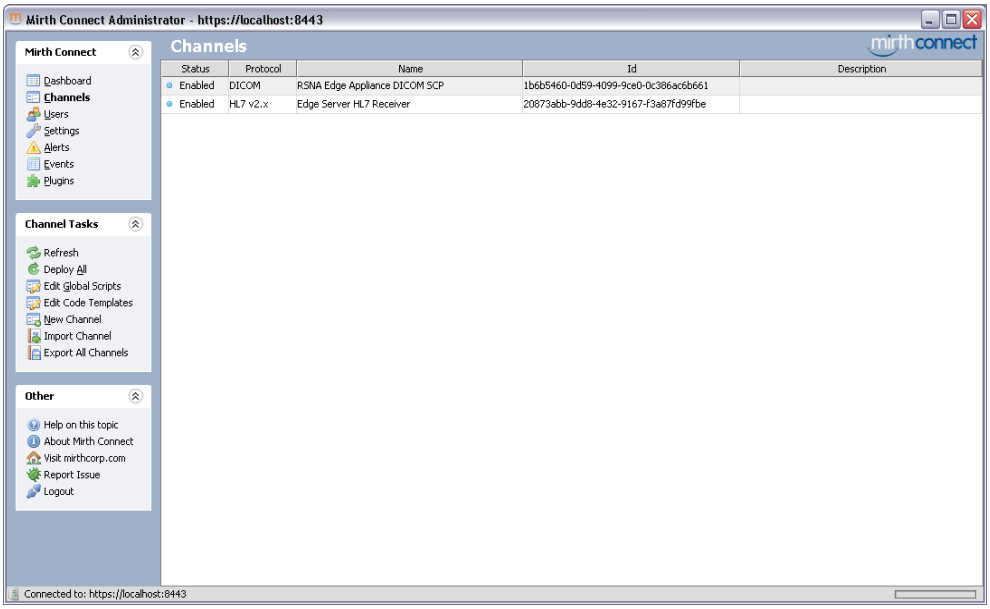

Figure 5-6: Configuring Mirth channels

10. Double click the DICOM channel to open it for editing. You’ll see the page below:

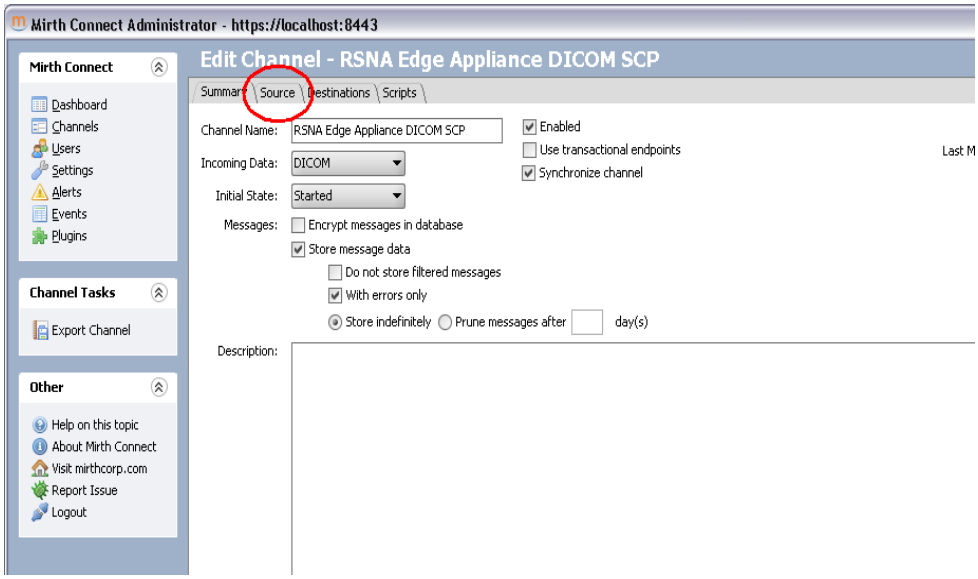

Figure 5-7: Configuring the DICOM channel

11. Click the "Source" tab and you'll see the configuration for the edge server SCP:

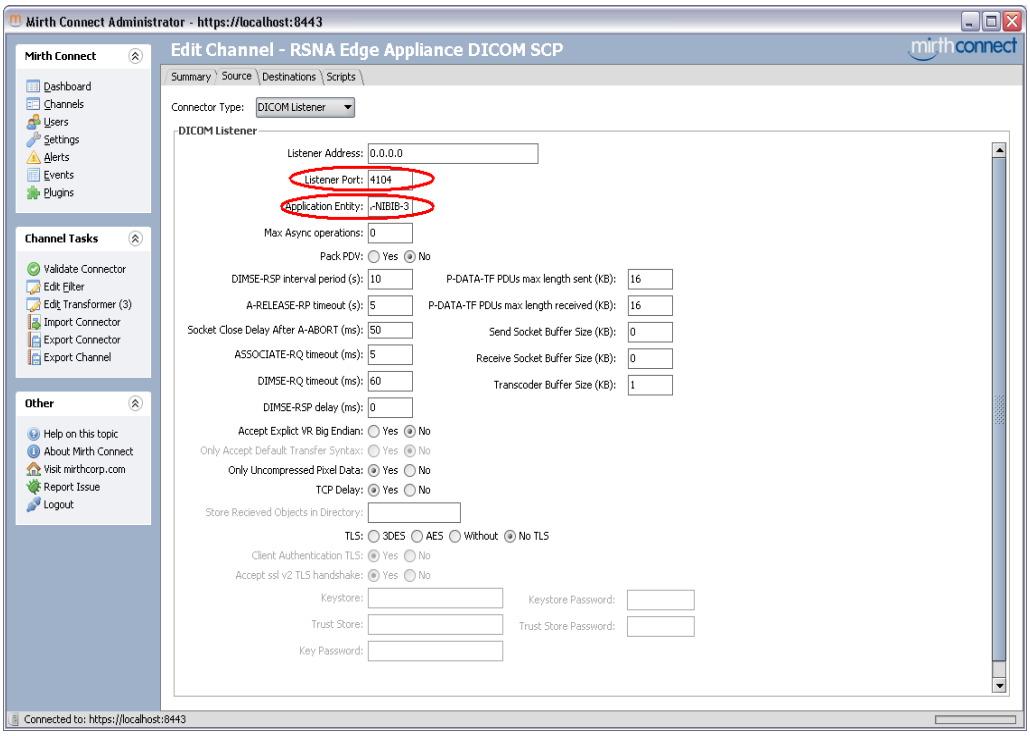

Figure 5-8: Configuring the DICOM SCP network parameters

12. Set the the Listener Port and Application Entity configurations to the appropriate values for your installation (e.g. 104 and RSNA-ISN). You can also tweak the other parameters as needed.
13. Now switch to the Destinations tab and select the "File Output" destination.
14. You will need to set the directory where the incoming DICOM objects will be saved. This is done by modifying the directory field (see picture below). The path must start with the location of the RSNA directory you configured during the installation procedure and end with "`/dcm/${patientId}/${accessionNumber}/`" (no quotes). For example if your RSNA directory was at "`/usr/local/edgeserver-1.0-SNAPSHOT`" then the directory path would be "`/usr/local/edgeserver-1.0-SNAPSHOT/dcm/${patientId}/${accessionNumber}/`".

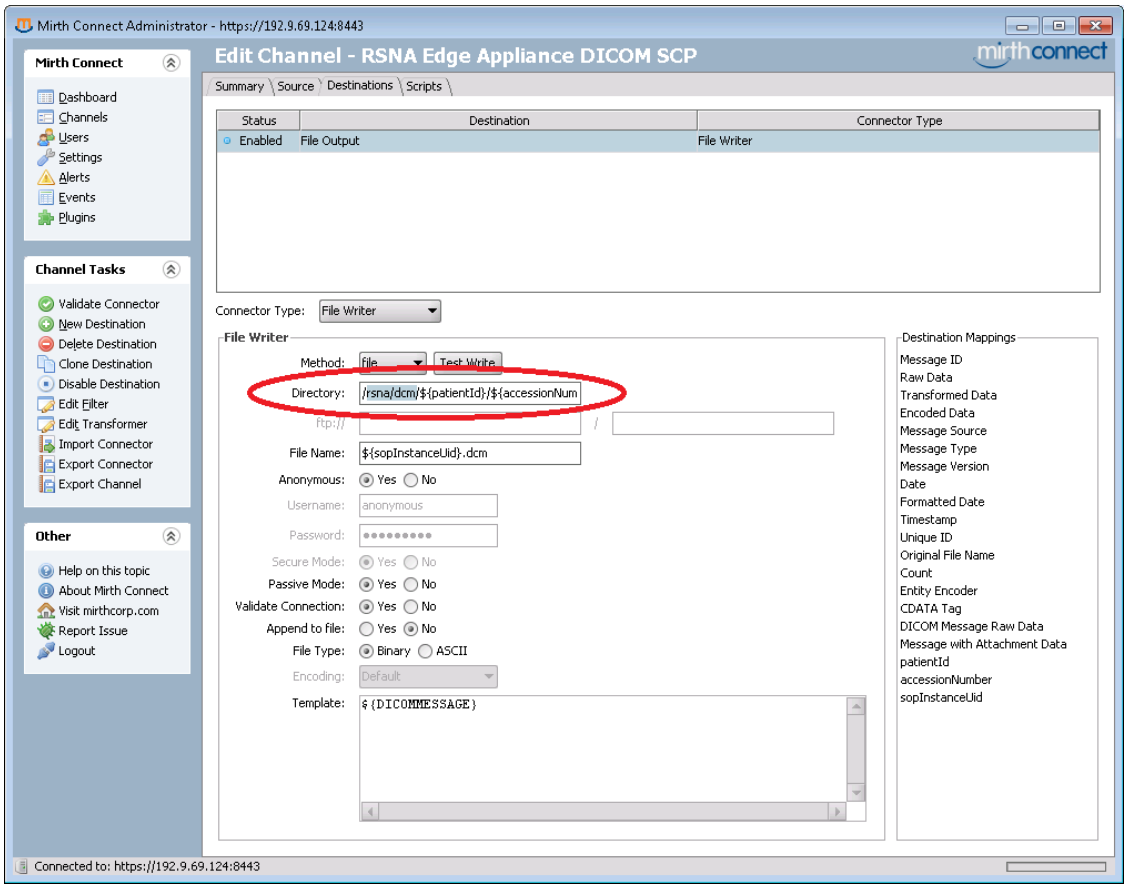

Figure 5-9: Modifying the image directory location

15. When you are done click the “Save Changes” link in the left column and switch back to the Channels panel.
16. Now double click on the HL7 channel to edit it. You’ll see the page below:

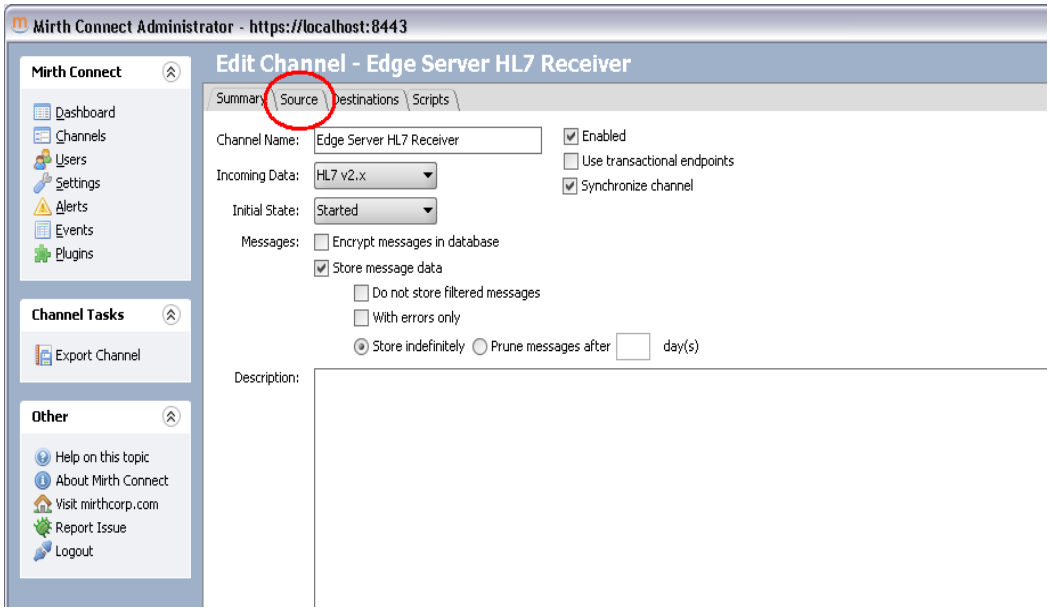

Figure 5-10: Configuring the HL7 channel

17. Click on the Source tab and you will see the screen below:

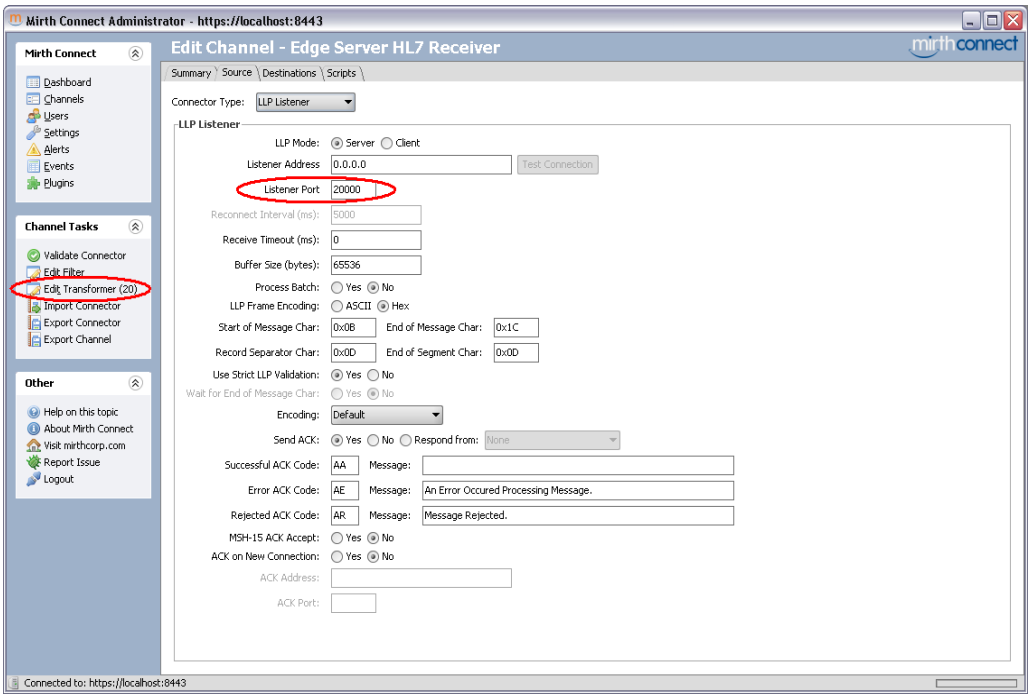

Figure 5-11: Configuring the HL7 network parameters

18. Set the Listener Port value to the appropriate value for your installation.
19. After you are done, click the “Edit Transformer” link in the left column. You will see the screen pictured below:

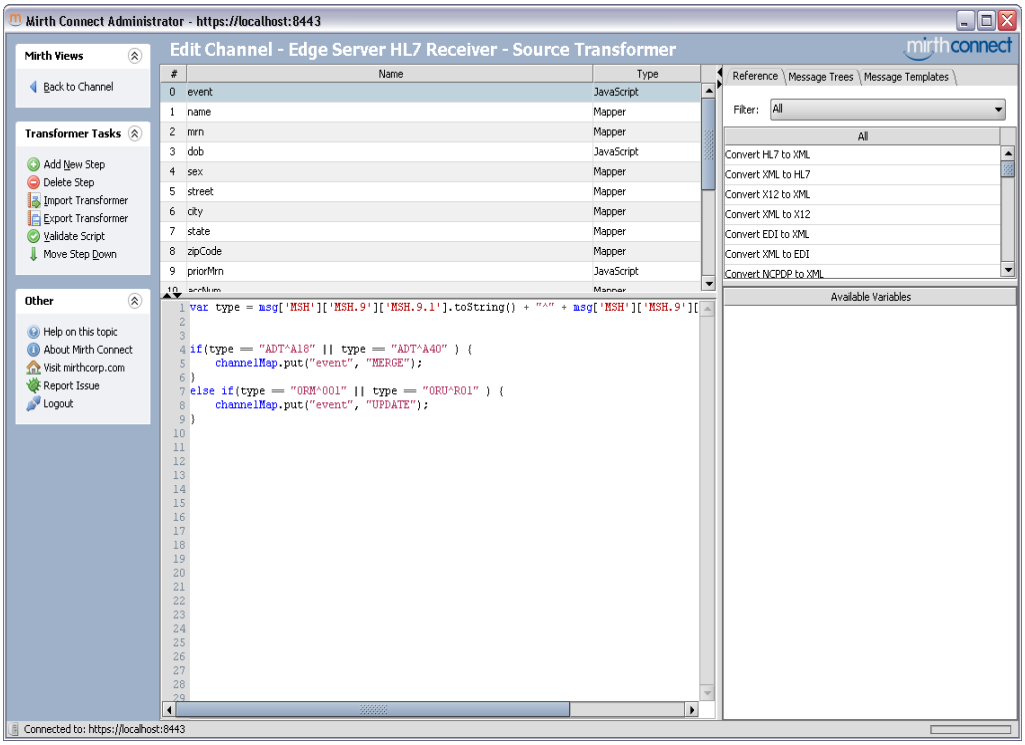

Figure 5-12: Configuring the HL7 channel variables

20. You will need to adjust the mapping between your HL7 messages and the channel variables used to populate the edge server database. The following variables require customization:

Variable	Notes
`event`	Type of event associated with the incoming message. Permitted values are: `UPDATE`

	MERGE Determines whether the incoming message is for an exam status UPDATE or a patient MERGE.
name	The patient's name. Must not be blank.
mrn	The patient's medical record number. This value will unique identify the patient on the edge server and is used to retrieve images from the site's PACS. Must not be blank.
dob	The patient date of birth. Cannot be null. Value must be of type `java.sql.Date`
sex	The patient's sex. Must not be blank.
street	The street component of a patient's address. Used by the token app to help site staff verify a patient's identity before their images are queued for transmission.
city	The city component of a patient's address. Used by the token app to help site staff verify a patient's identity before their images are queued for transmission.
state	The state component of a patient's address. Used by the token app to help site staff verify a patient's identity before their images are queued for transmission.
zipCode	The zip code component of a patient's address. Used by the token app to help site staff verify a patient's identity before their images are queued for transmission.
priorMrn	Used when merging two patients. Should be populated when there is a patient merge message.
accNum	The exam's accession number. This value will uniquely identify an exam on the edge server and is used to retrieve images from the site's PACS.
studyDescription	The exam description.
status	The exam status. Sites will need to map their exam status codes to the following values: ORDERED SCHEDULED IN-PROGRESS COMPLETED DICTATED PRELIMINARY FINALIZED REVISED ADDENDED CANCELED NON-REPORTABLE
statusChangeTimestamp	The timestamp of the exam status change. Cannot be null. Value must be of type `java.sql.Timestamp`.
report	The full text of the report. The text must be *plain text* and cannot contain any HL7 formatting character sequences.
signer	The report signer.
dictator	The report dictator.
transcriber	The report transcriber.

21. When you are done click the "Save Changes" link in the left column and switch back to the Channels panel.

22. Right click on the list of channels and select “Deploy All” from the context menu.
23. You will then see the Dashboard panel pictured below. Verify that both channels are listed as “Started”.

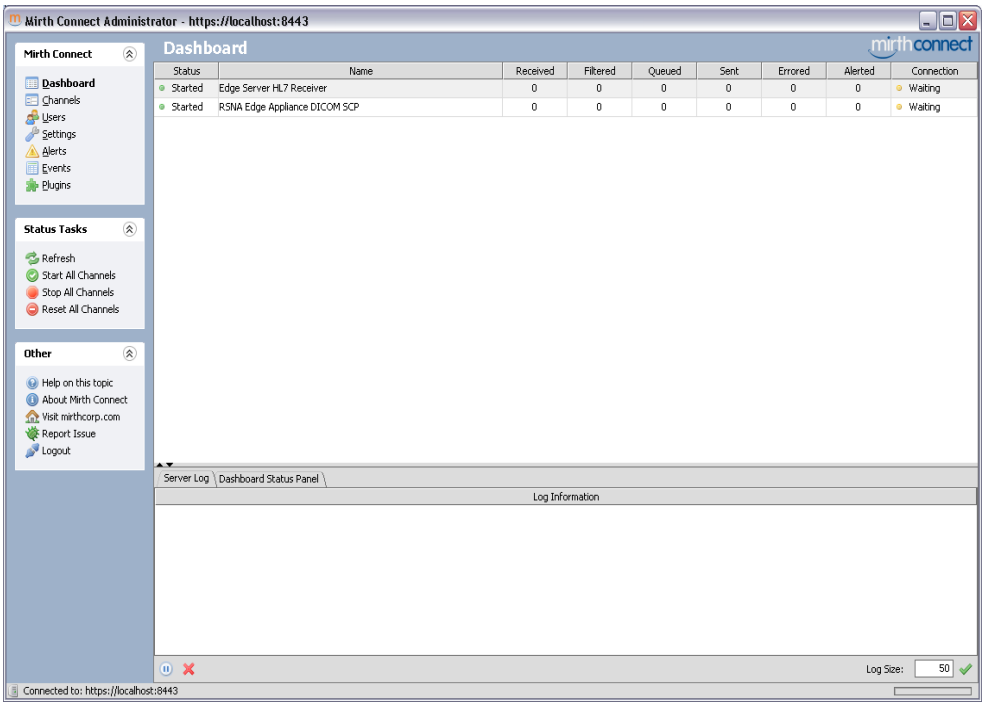

Figure 5-13: The Mirth Administrator dashboard for monitoring channel status

6. The Web UI

Initial Login and Account Management:

As in Chapter 5, configuration is done via a web browser which can be local to the Edge appliance or remote. Currently the supported browsers are:

a) Firefox versions > V3.5
b) Google Chrome (latest version)
c) Internet Explorer > V7.0
d) Safari (latest version)

If you are local on the Edge server, one can use the URL **http://localhost:3000,** if remote use **http://edge-hostname-or-ip:3000/** and enter the initial login credentials:

- Username: **admin**
- Password: **changeme**

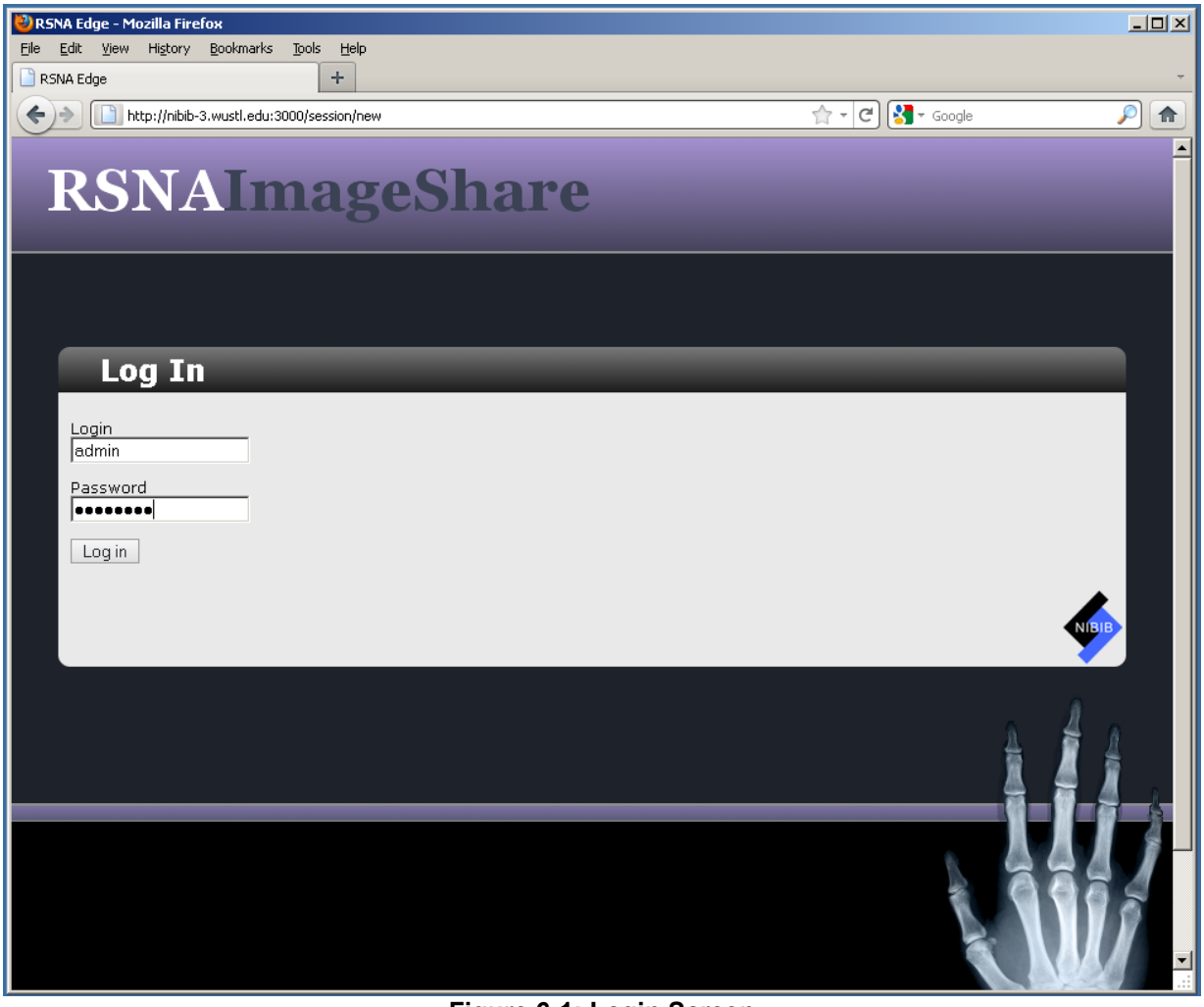

Figure 6-1: Login Screen

The initial landing page is the patient search interface. For security reasons, it is suggested your first activity is to change the administrator password, so click the "Change Password" button to change your password.

Figure 6-2: Successful Login and Patient Search

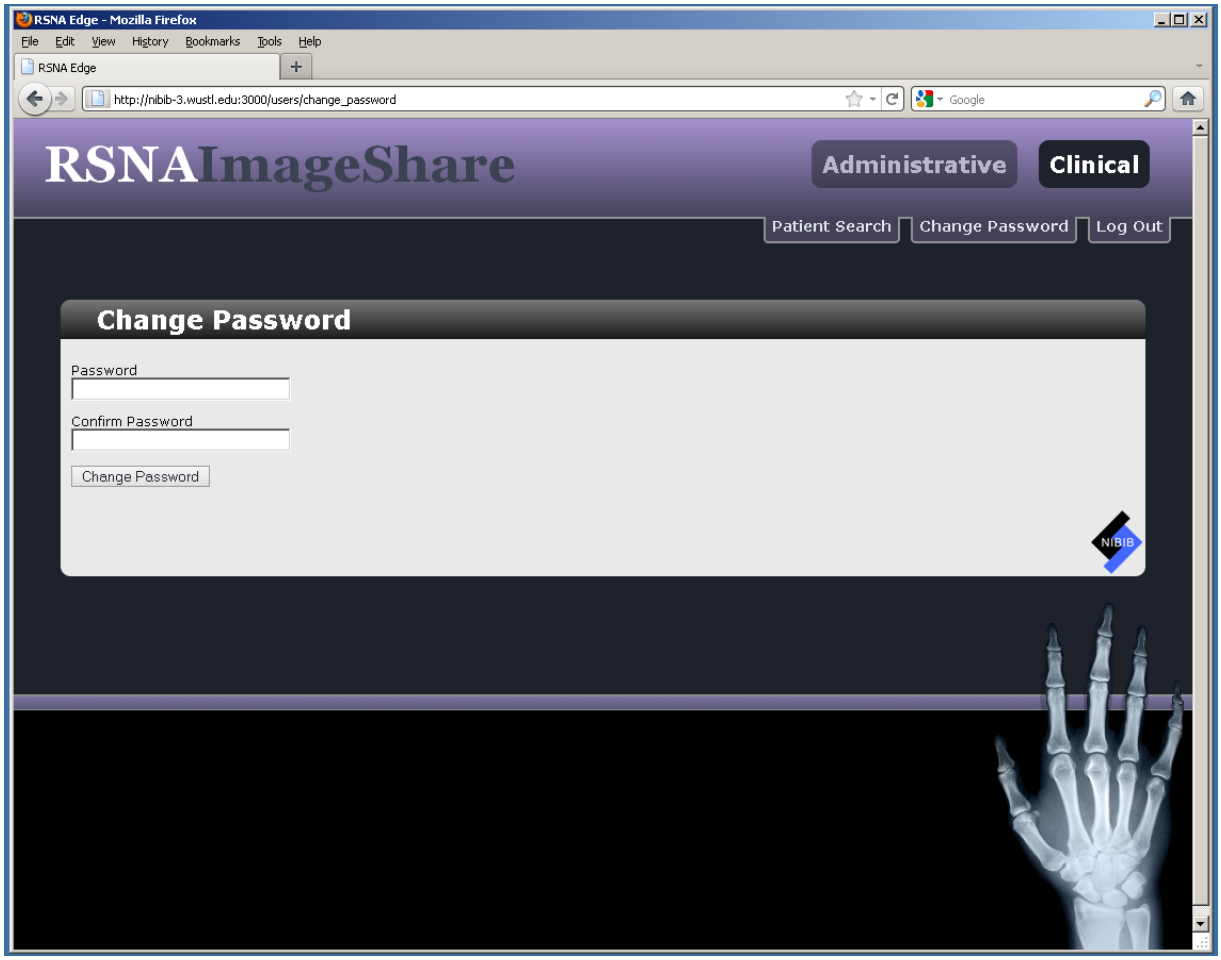

Figure 6-3: Changing Password

The *admin* user has full privileges, including the ability to create other users, change system configuration options, and view logs. To create a new user, click the "Administrative" button, then click the "New User" button.

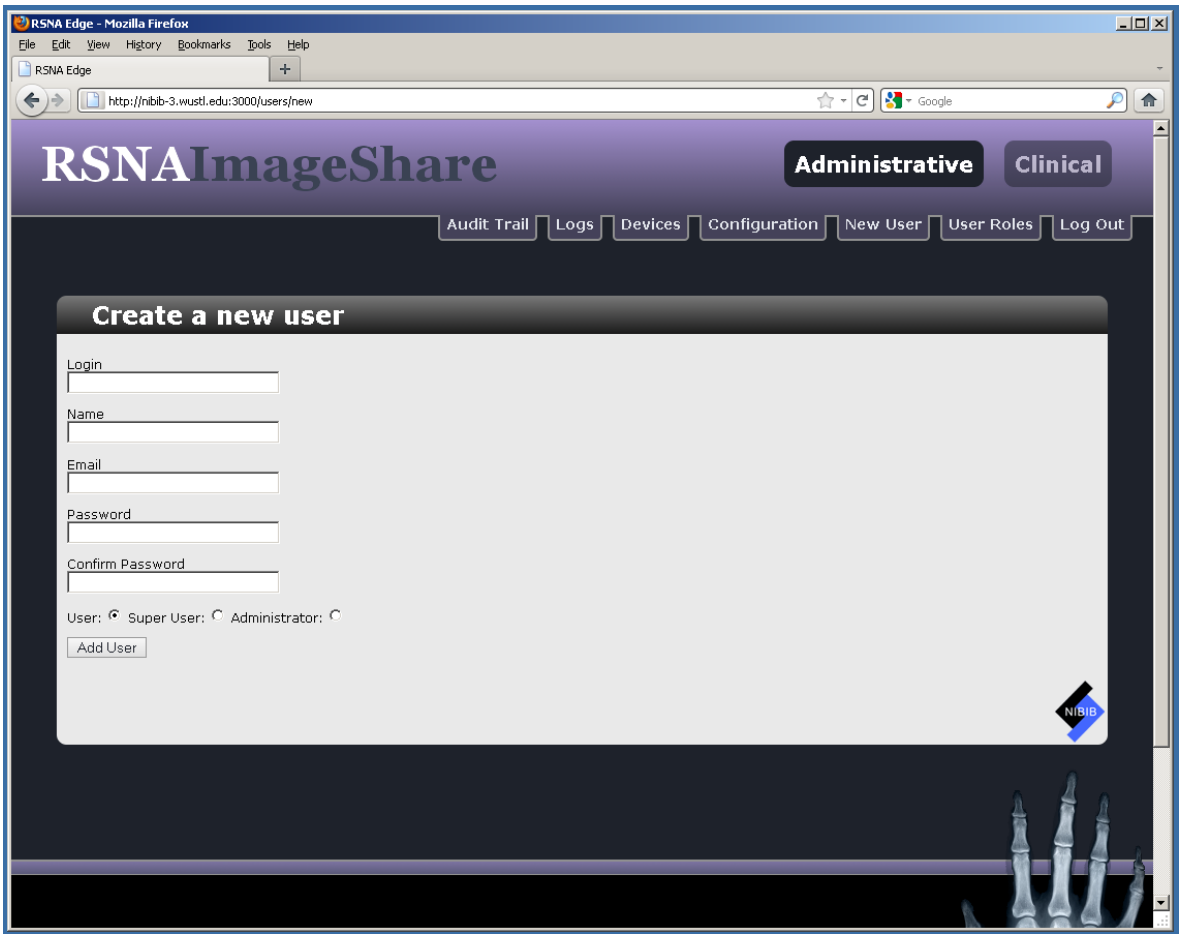

Figure 6-4: Creating a new user

When creating the user, note that there are 3 roles to choose from:

- **Administrator**: create/delete/edit users, modify devices and site config, view jobs (all privileges)
- **Super User**: same as user, with ability to view all jobs
- **User**: look up patients and create RSNA IDs, reset PINs, submit jobs, and view their own jobs

These roles can always be adjust by clicking the "User Roles" buttons.

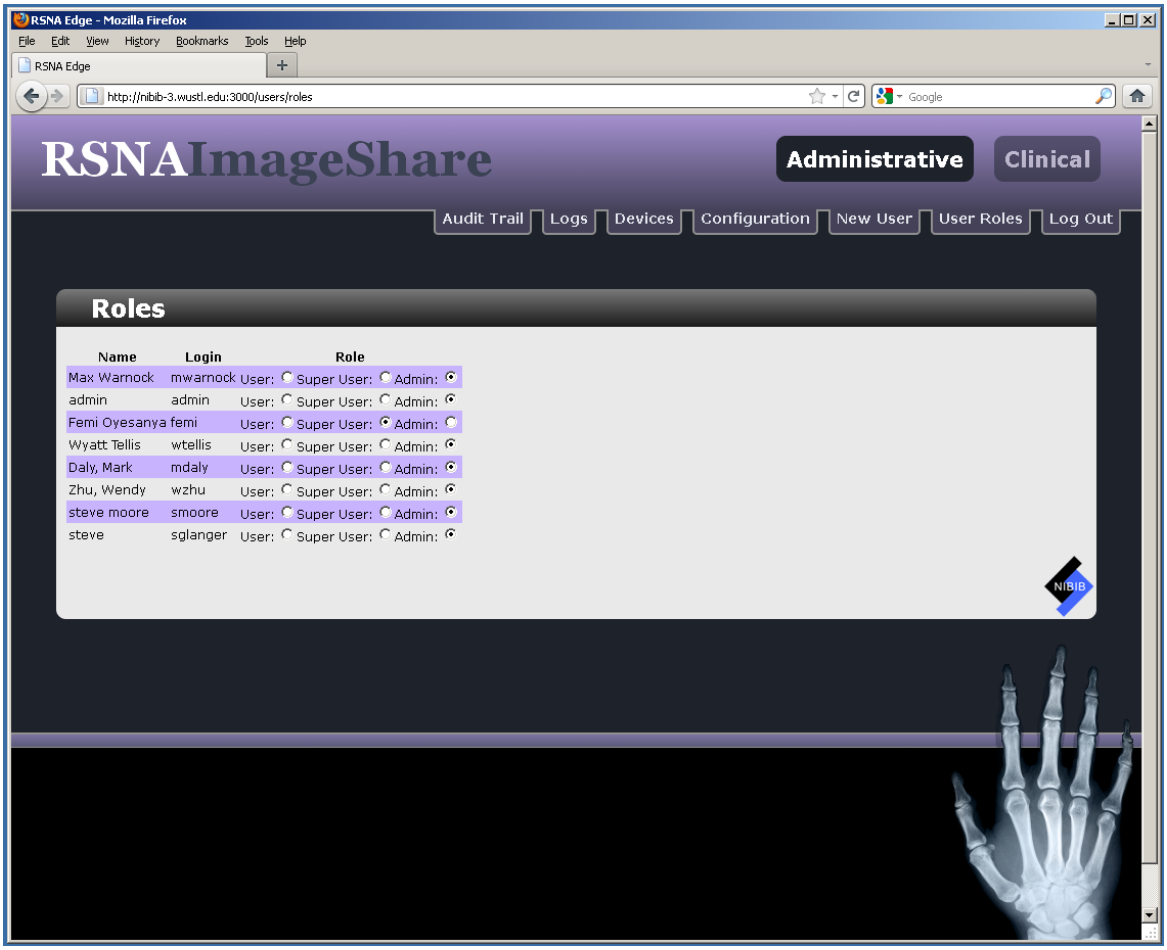

Figure 6-5: Adjusting User Roles

Configuration Options:

The Administrative interface can be used to configure information about the DICOM device by clicking the "Devices" link.

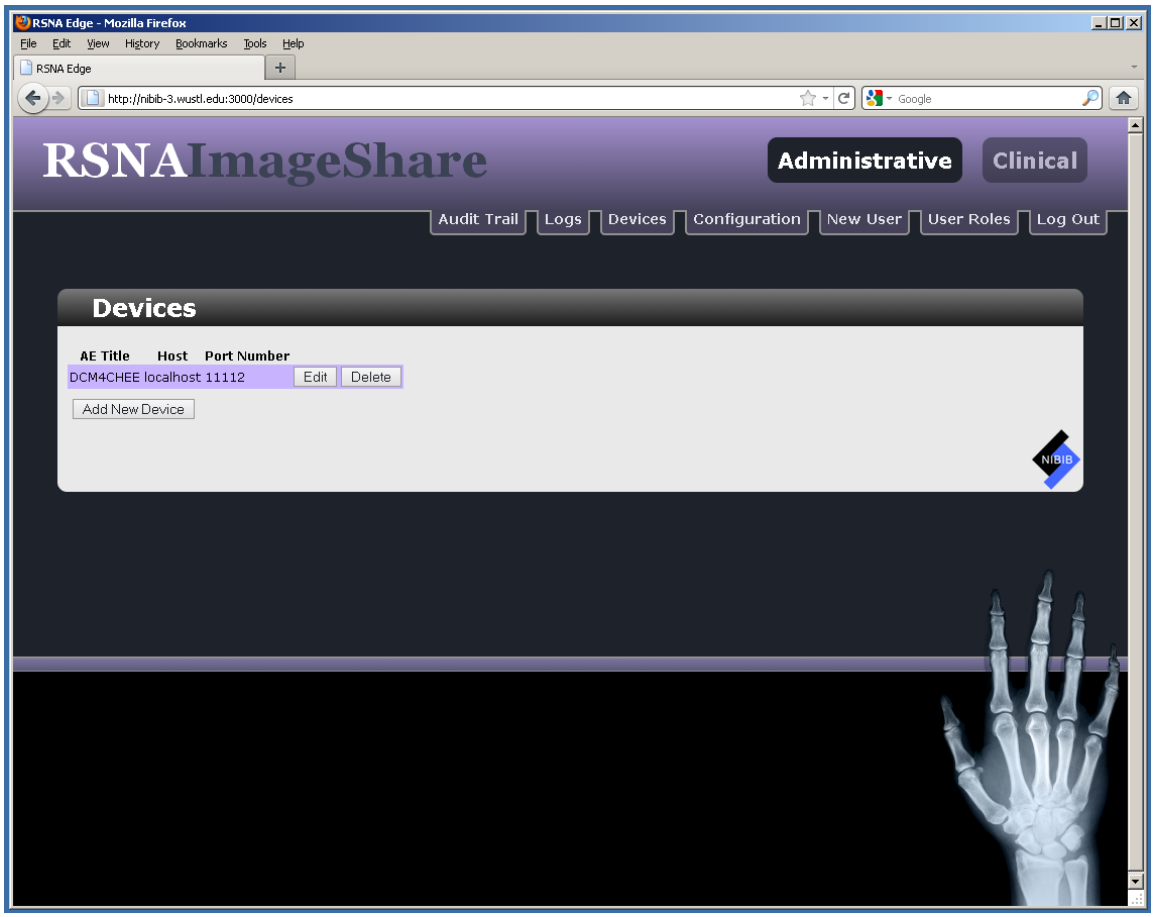

Figure 6-6: DICOM Device Configuration

In addition, other system settings can be adjusted by clicking the "Configuration" button.

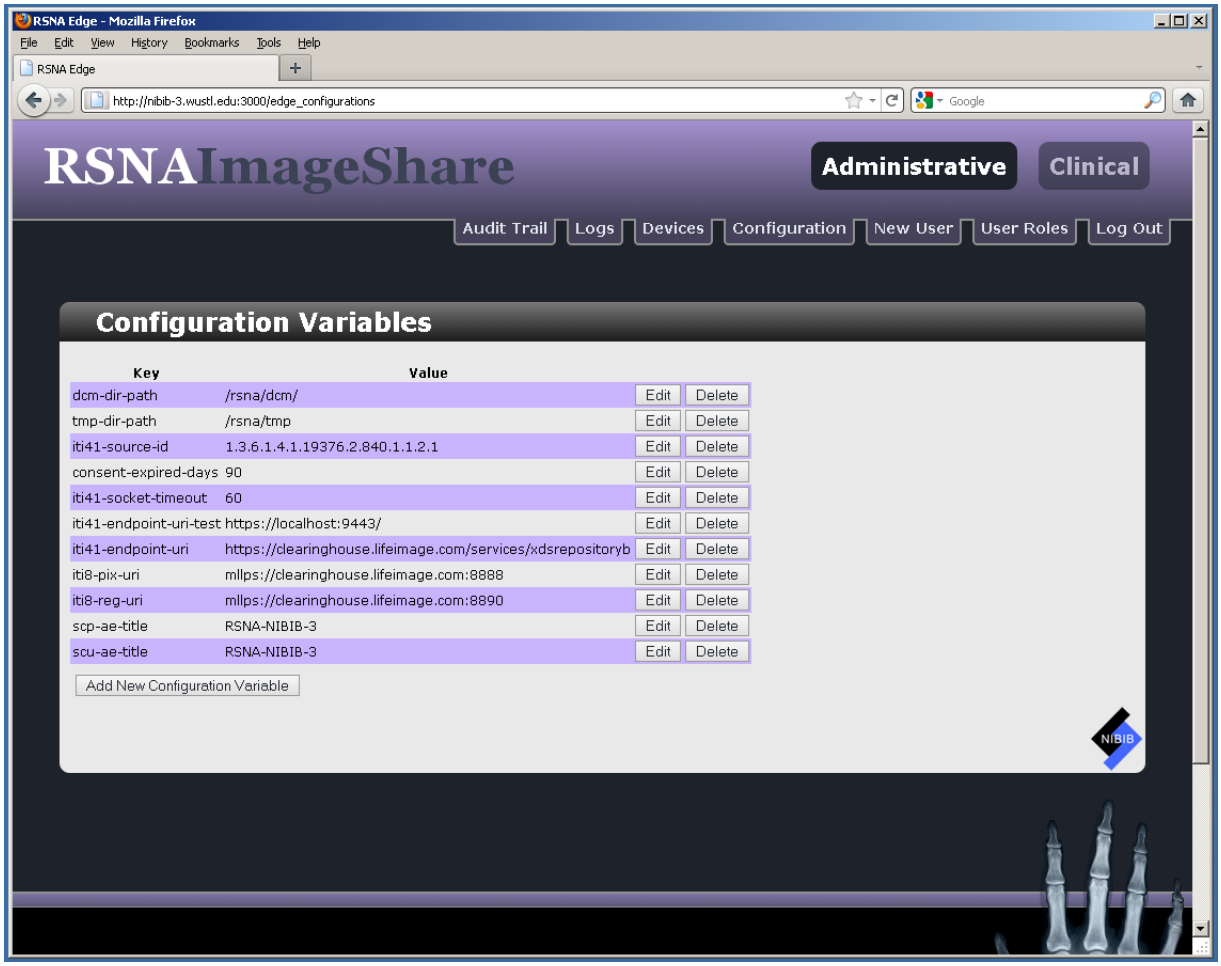

Figure 6-7: System Configuration Options

Configuration:

The edge server relies on several variables specified in the database and editable using the Administrative configuration page. To get there click on the "Administrative" menu and then "Configuration". One variable that should be set by each site is the "help_desk_message" variable. This value will appear on the printout given to patients. The default message is: "Please contact helpdesk@imsharing.org or call 1-855-IM-SHARING (467-4274) for support"

Administrative Overview:

The Administrative interface also provides audit and application log views by clicking the "Audit Trail Button" and the "Logs" buttons.

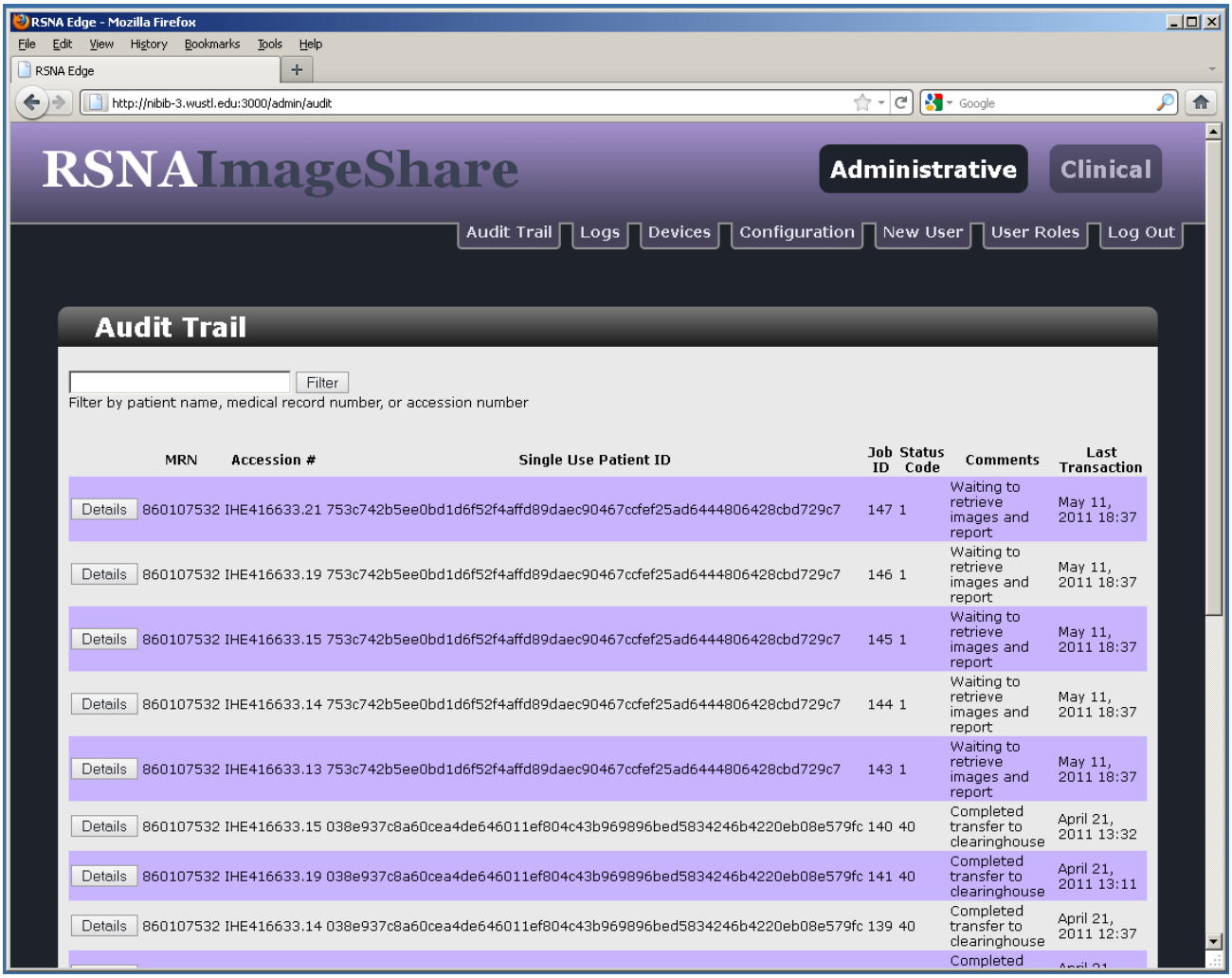

Figure 6-8: Audit Trail Interface

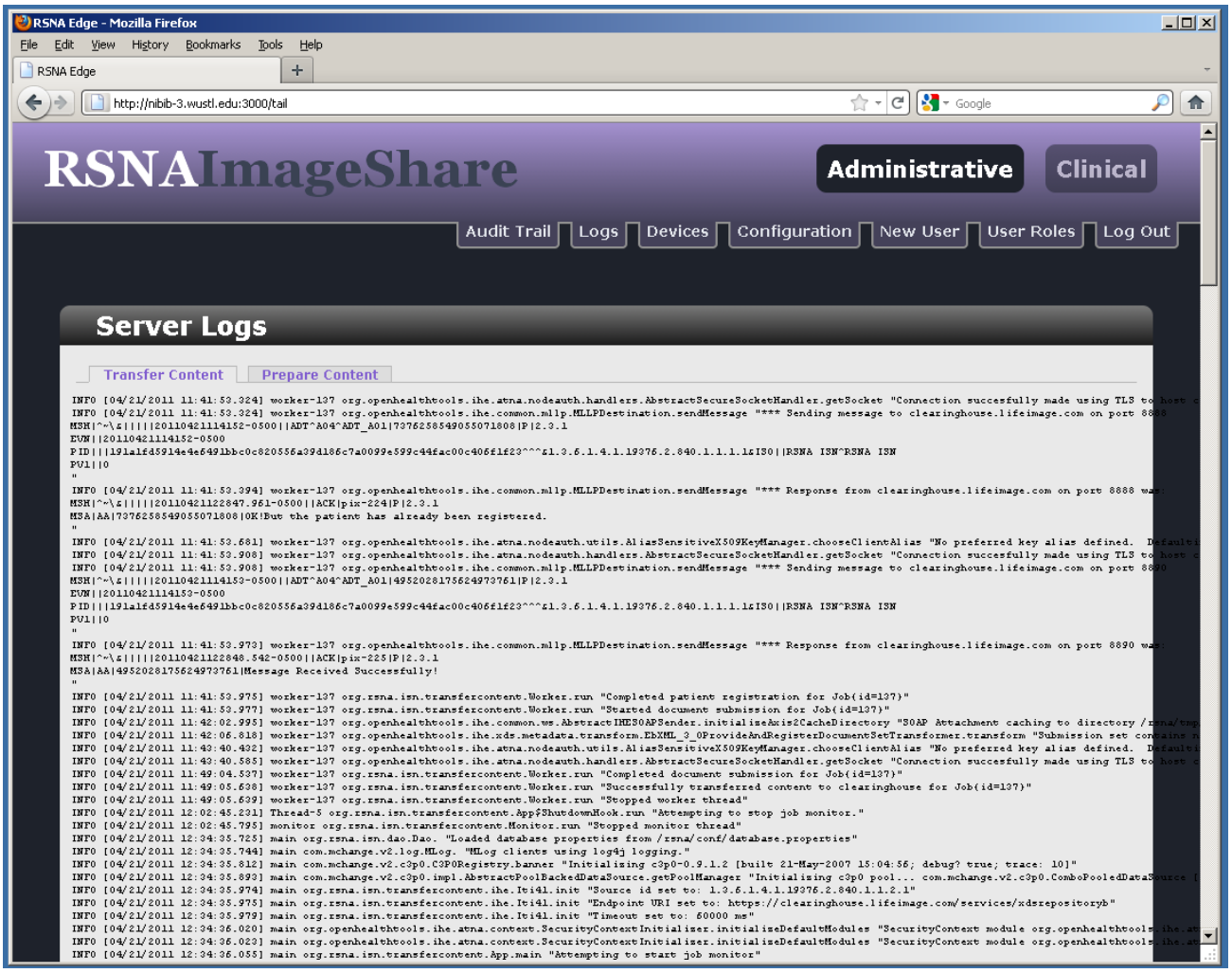

Figure 6-9: Application Logs

Normal Usage:

Normal workflow is to search for a patient under the Clinical interface by clicking the "Patient Search" button. There is also an Advanced Search link you can use on this page.

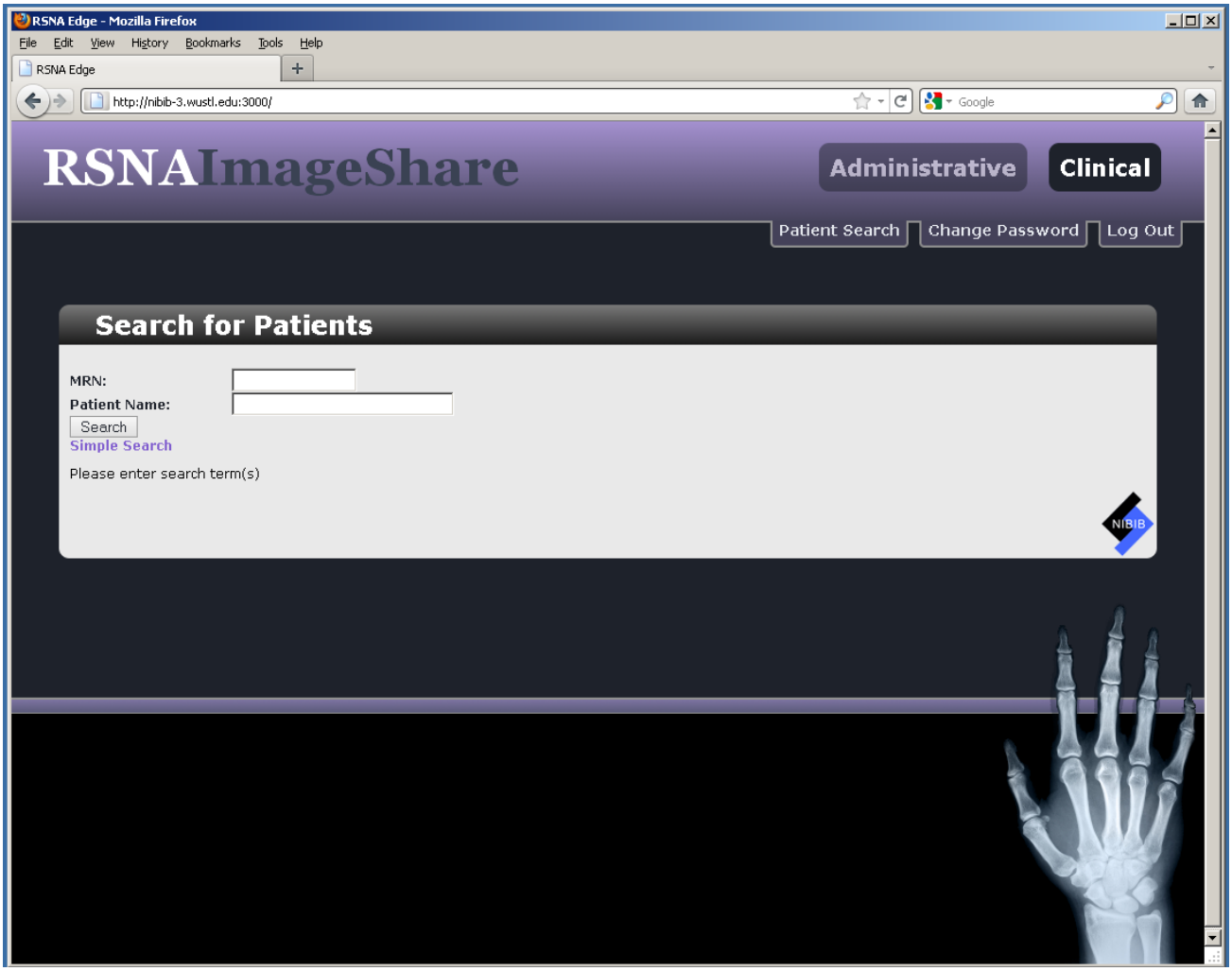

Figure 6-10: Advanced Patient Search

Once you search for a patient, results are presented and you can choose a patient. This prompts for a patient confirmation and consent acknowledgement. After the confirmation is acknowledged, a list of the selected patients exams are presented. These exams are added to a “shopping-cart” style interface.

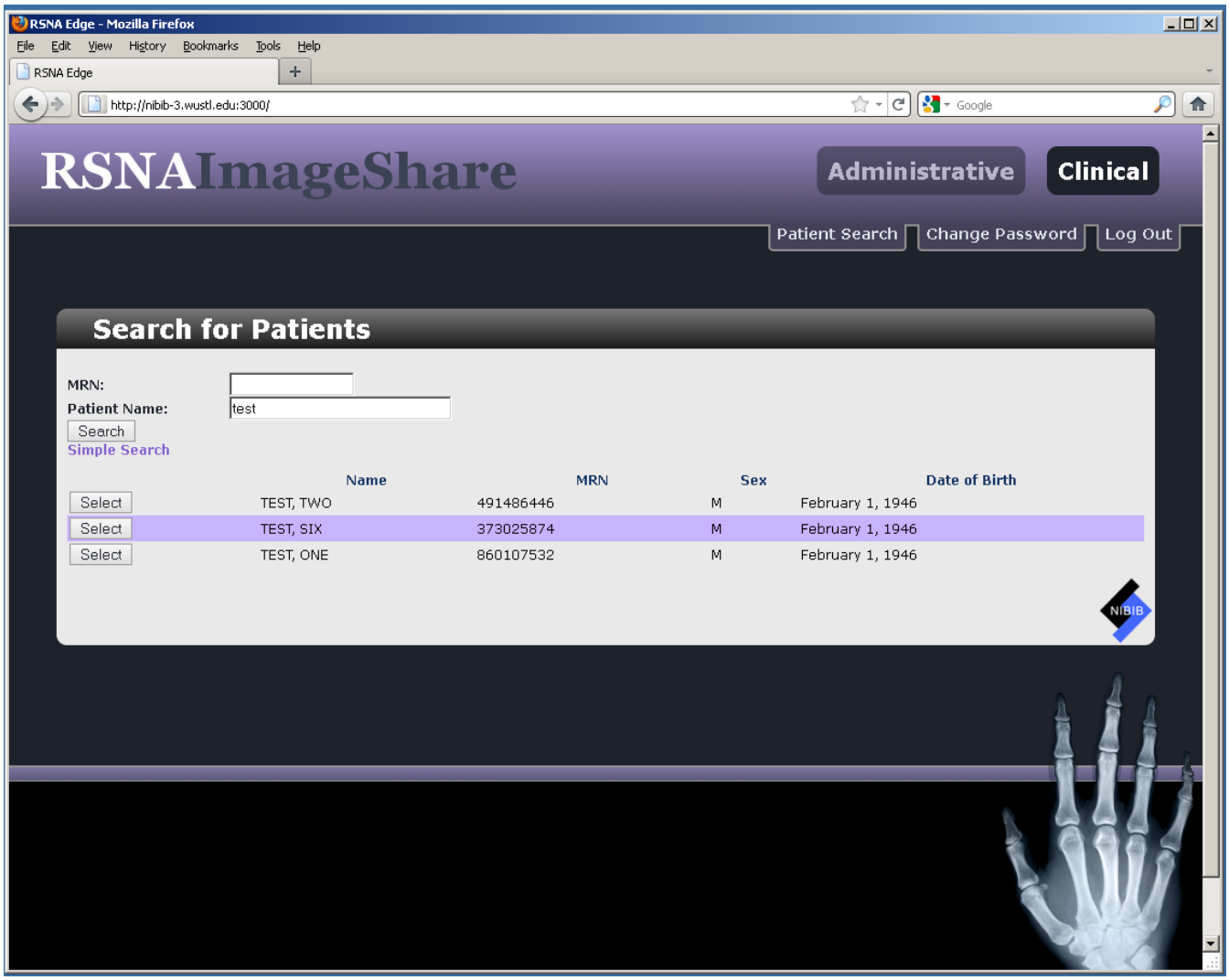

Figure 6-11: Search Results

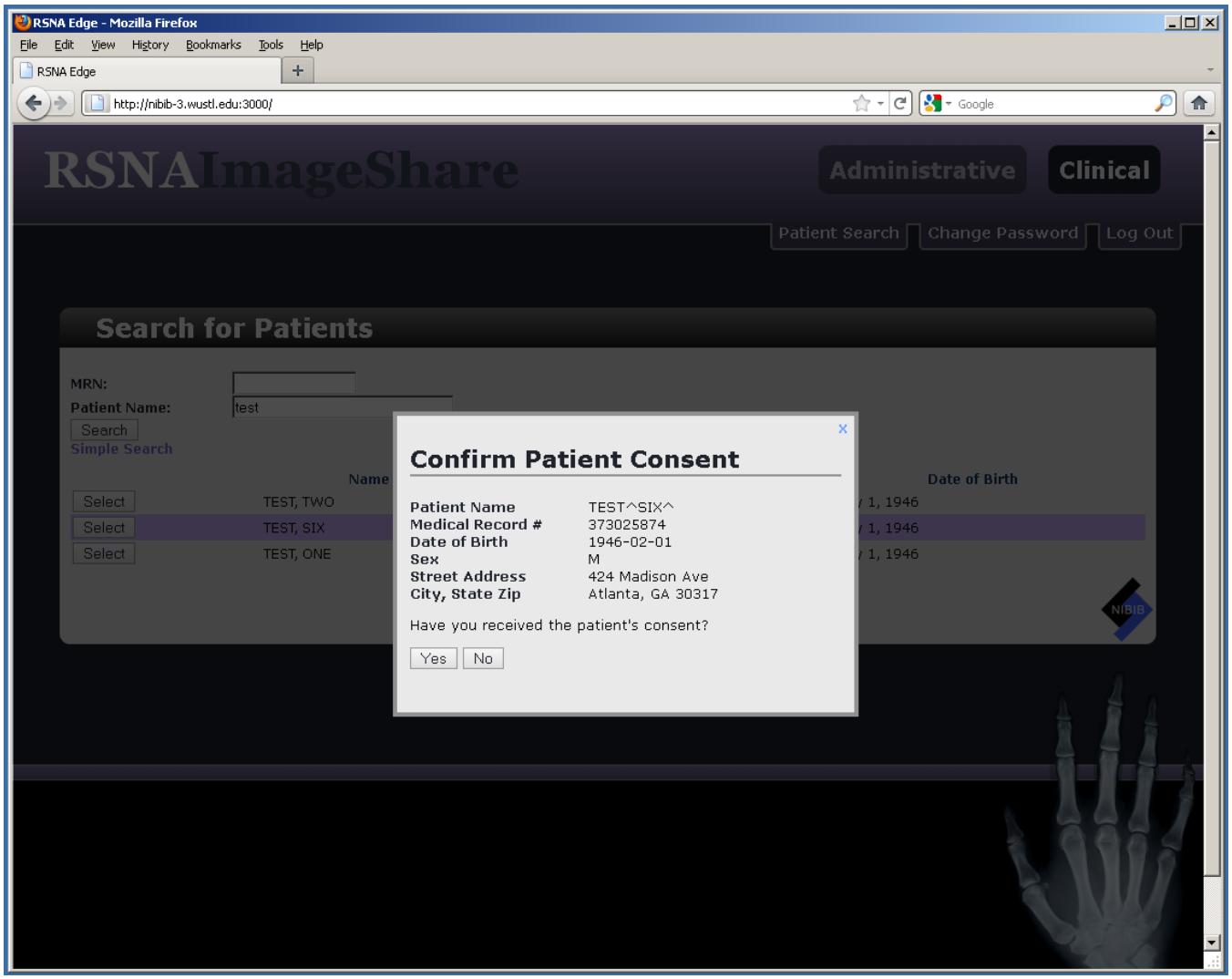

Figure 6-12: Patient Confirmation and Consent Acknowledgment

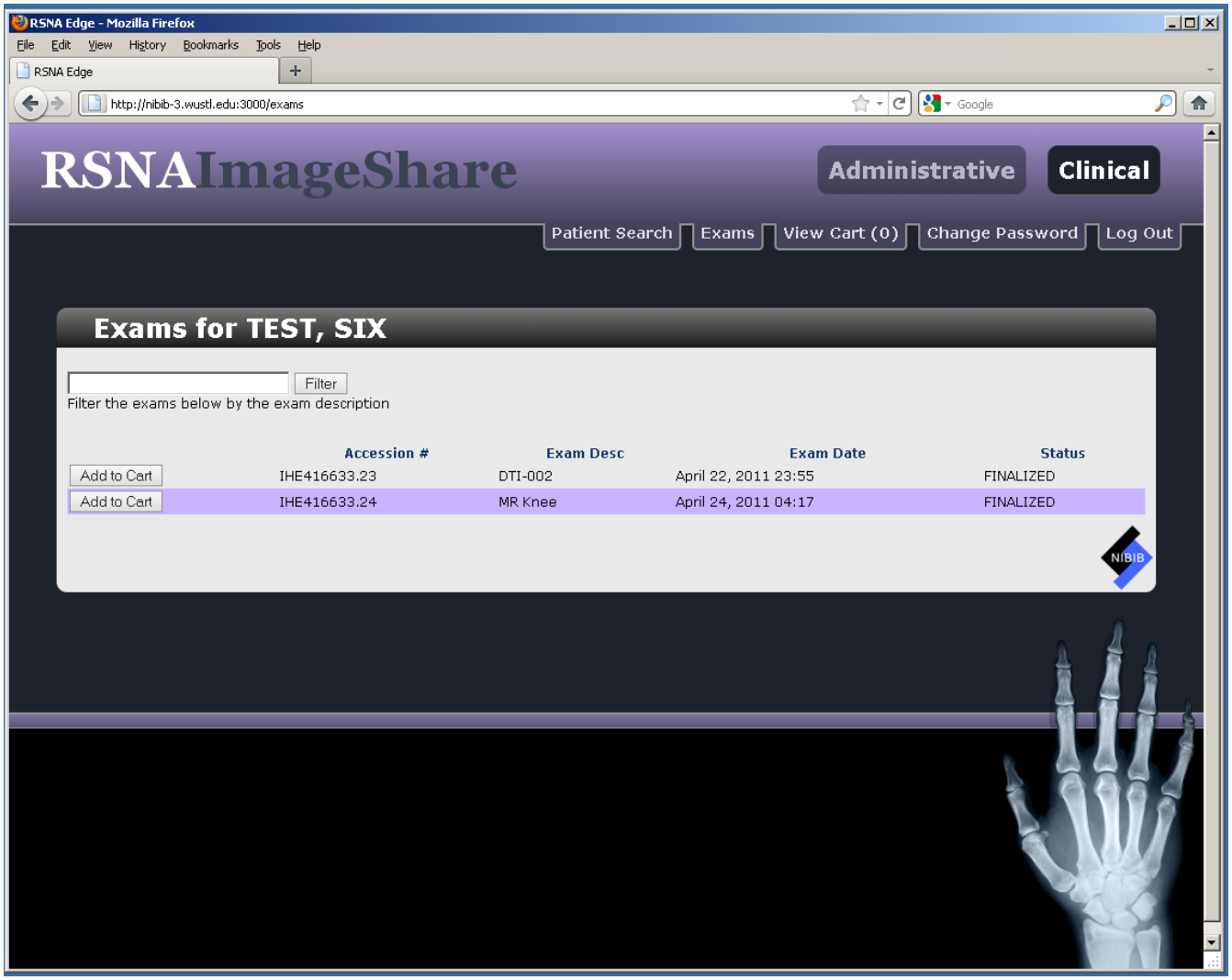

Figure 6-13: Exam Selection

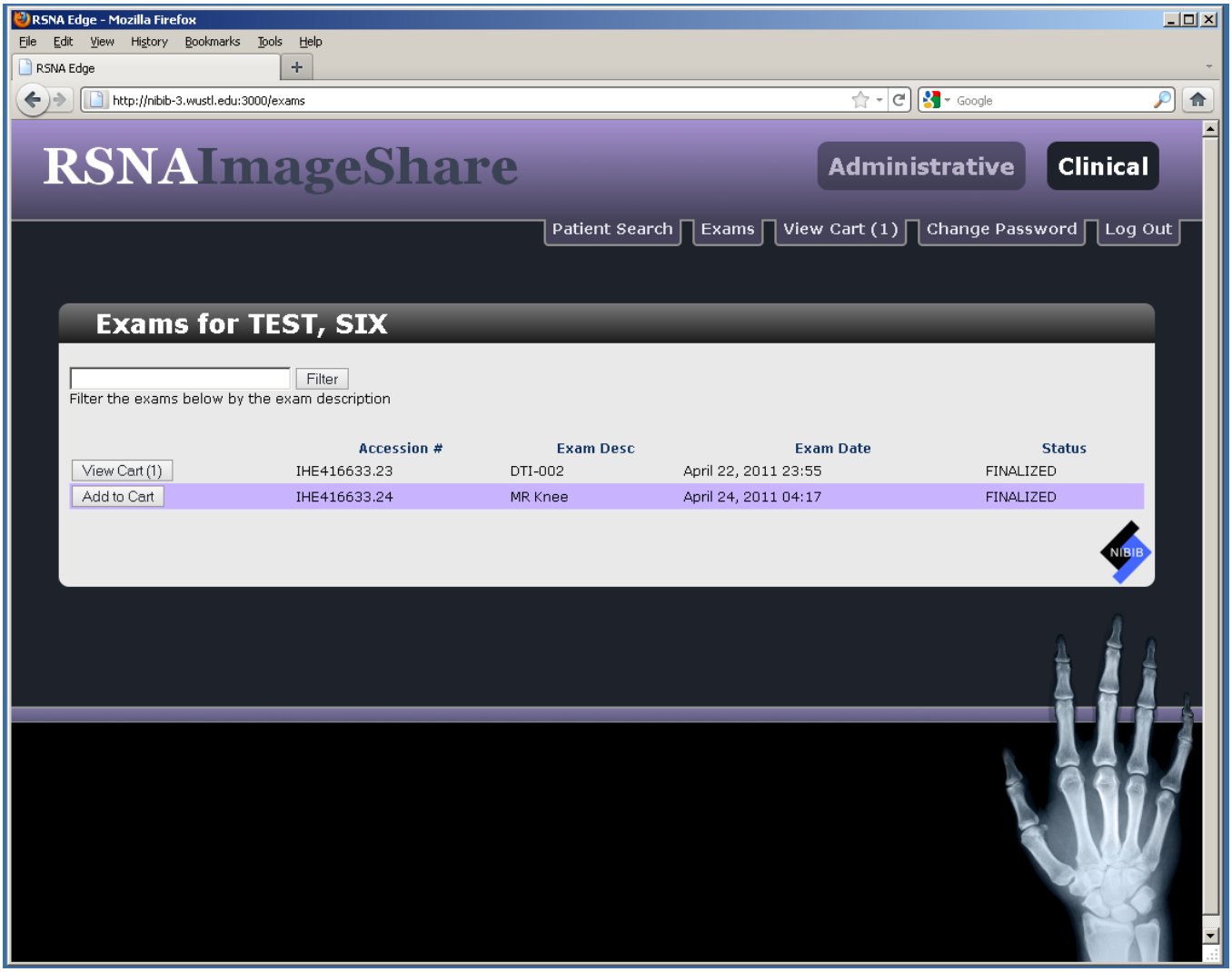

Figure 6-14: Selected Exams in the Cart

Clicking the "Send Cart" button will prompt for creation of an RSNA ID. After creation, the job is put in the queue and the user is prompted to print the RSNA ID for the patient. **Please note that pop-up blockers are popular in modern browsers and an exception will need to be made to allow the PDF printout to appear.**

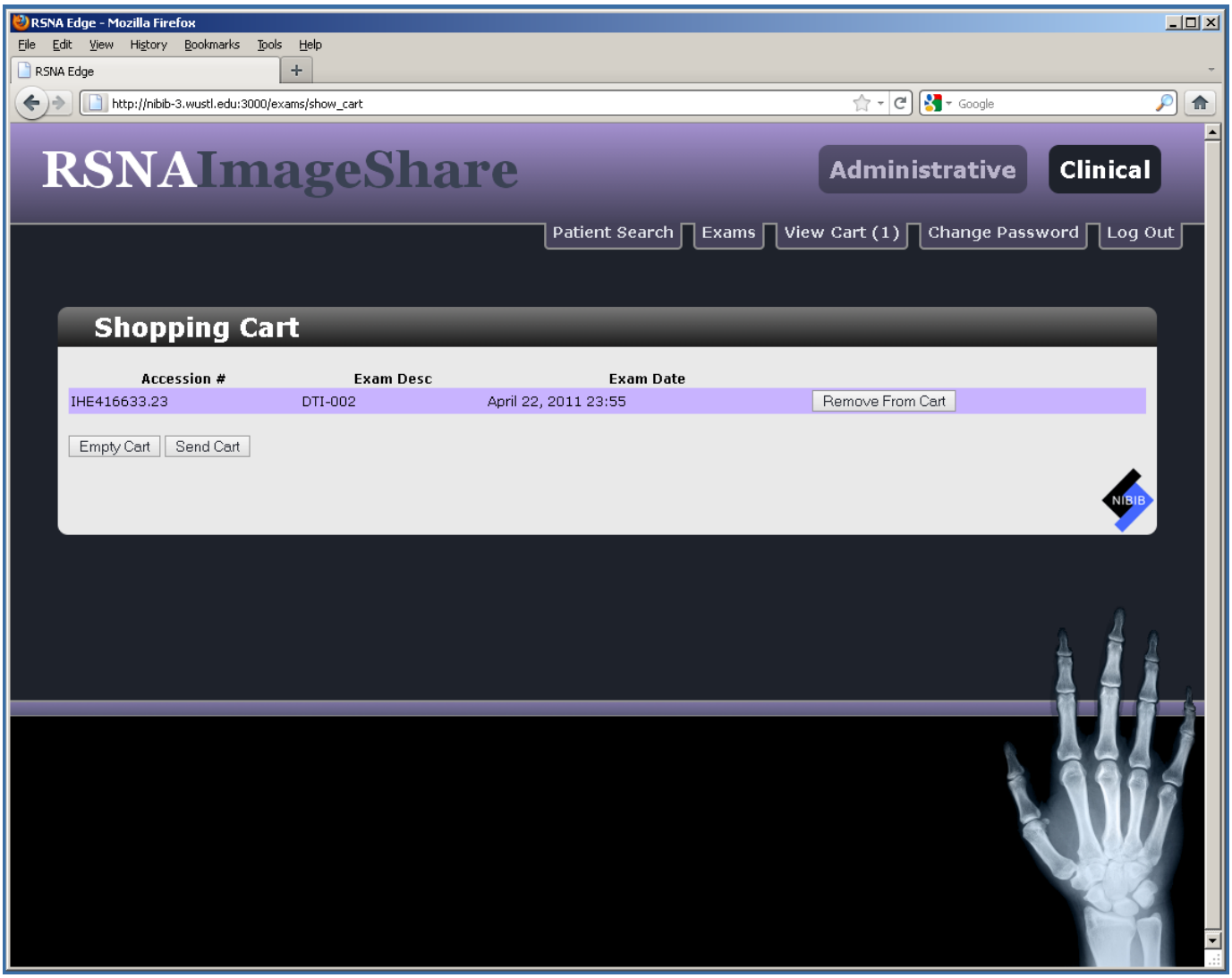

Figure 6-15: Sending Cart

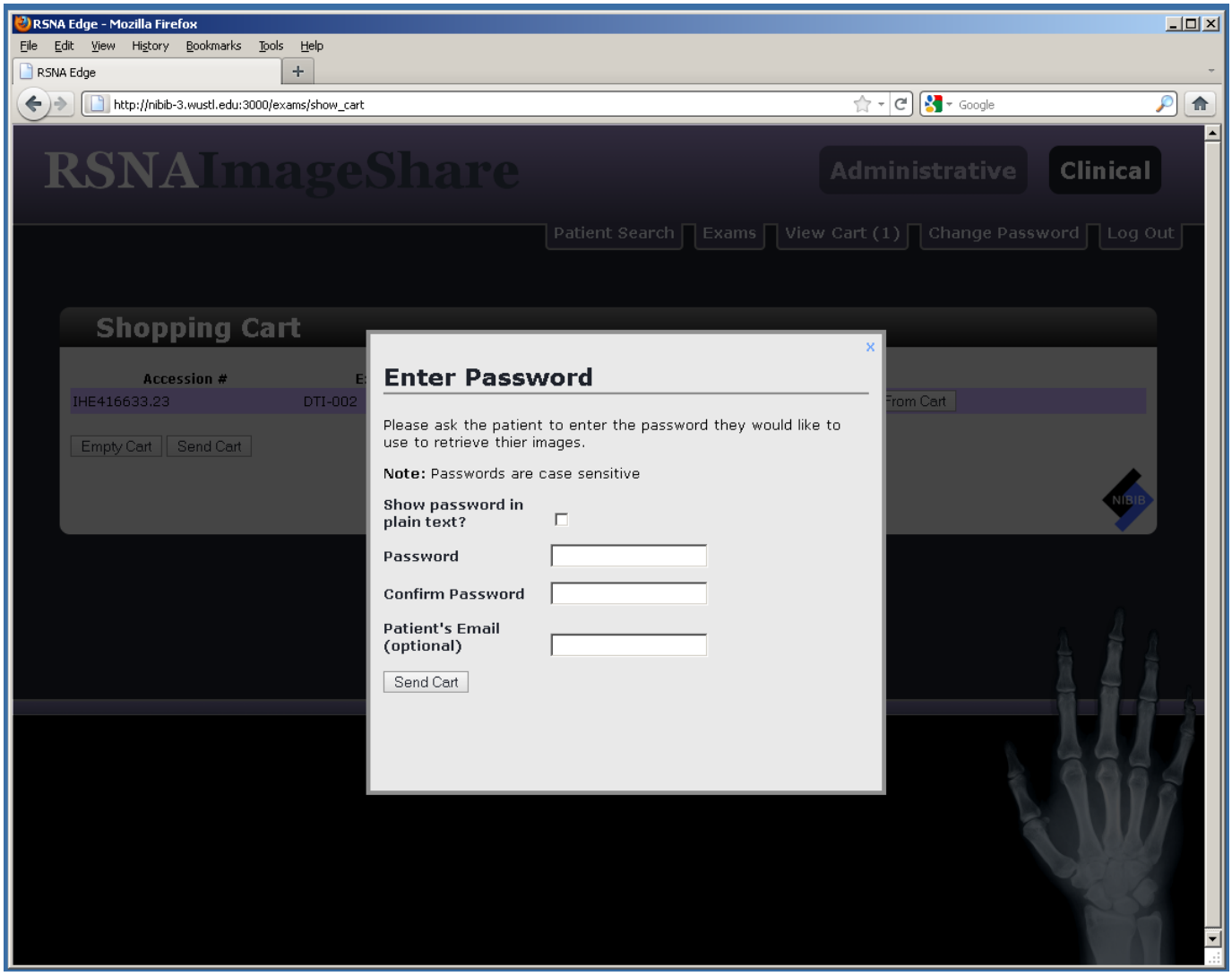

Figure 6-16: Creating the RSNA ID

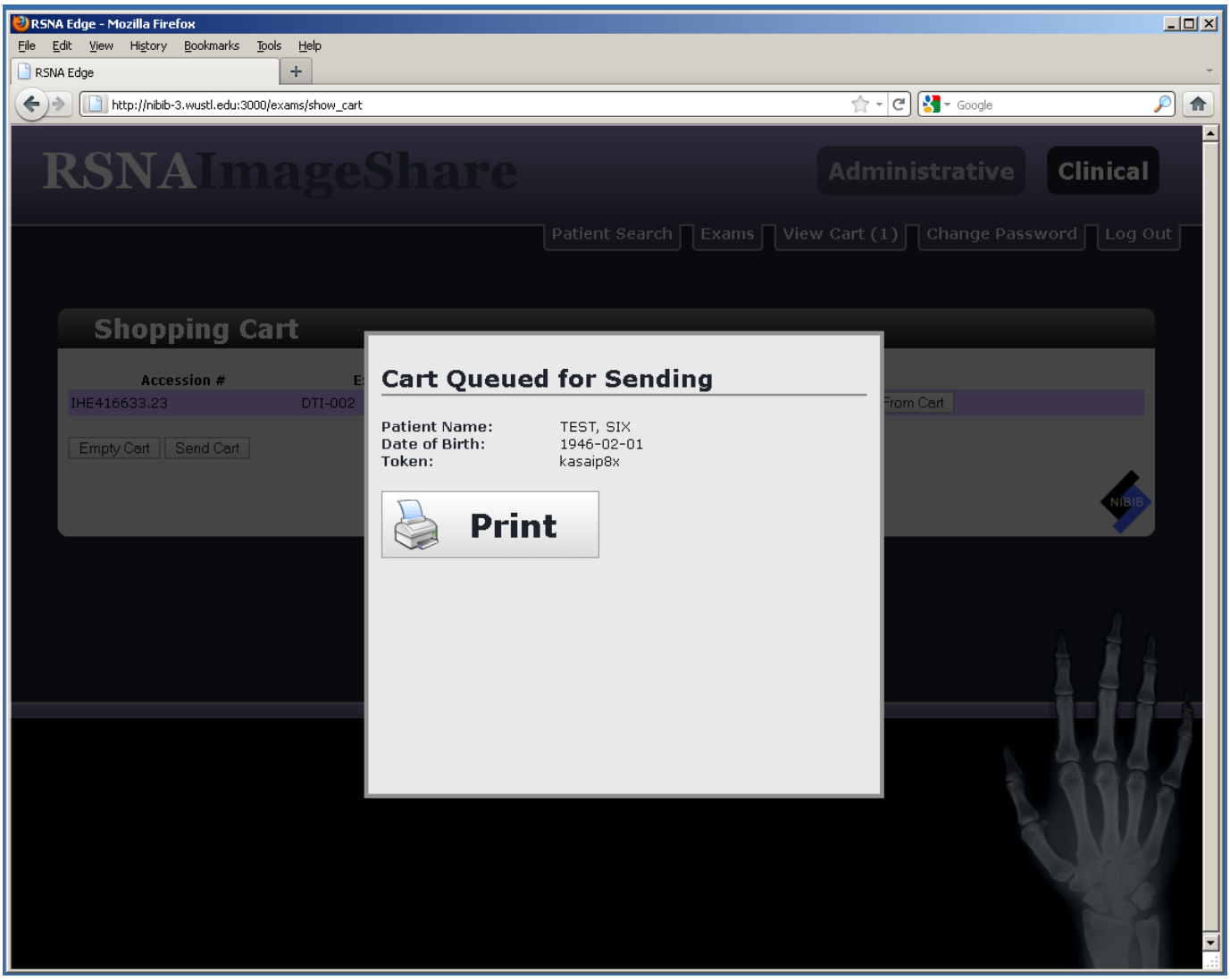

Figure 6-17: Exam Queued to be Sent, Print Dialog Prompt for RSNA ID

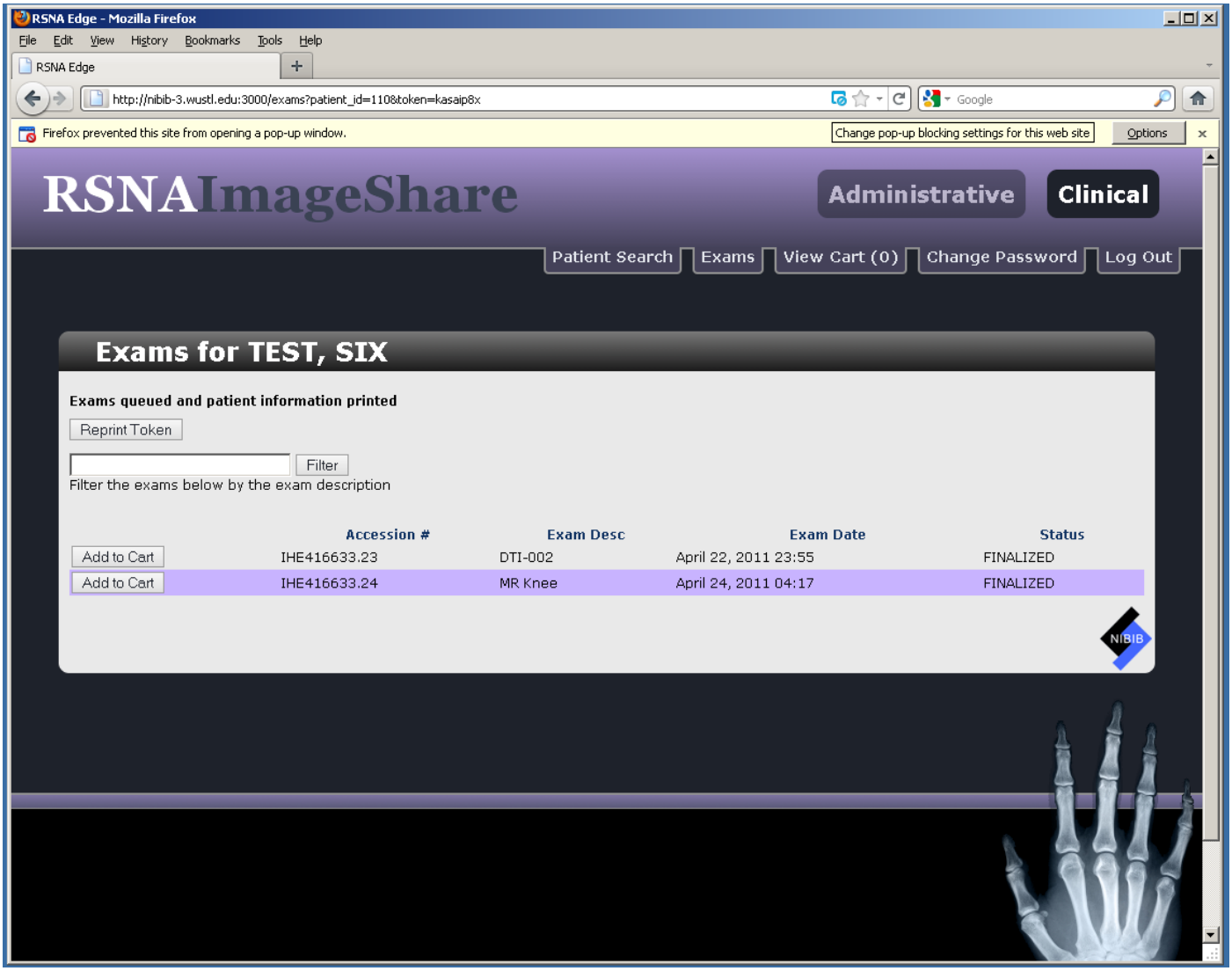

Figure 6-18: Pop-up blockers will prevent the RSNA ID from printing

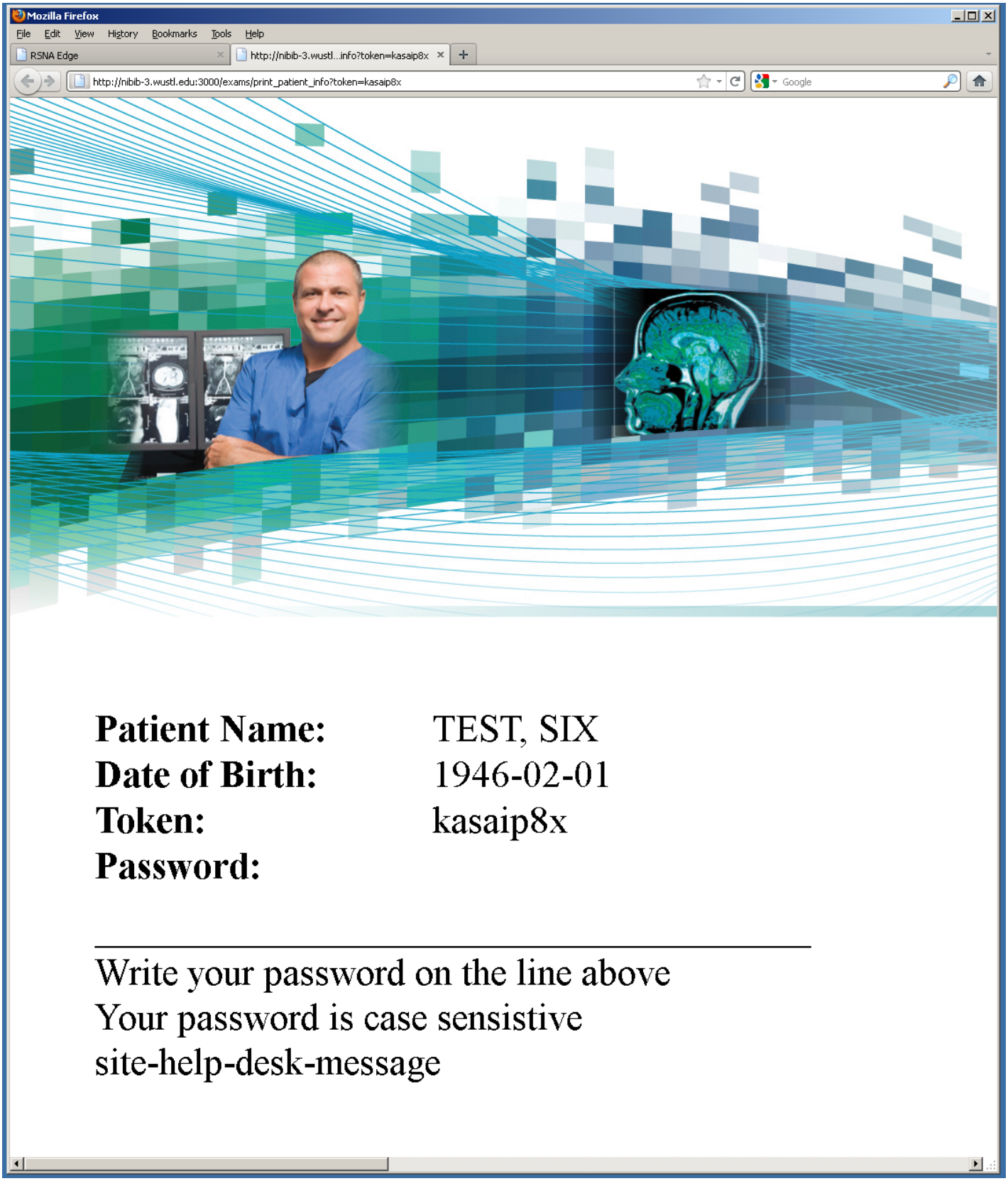

Figure 6-19: Sample RSNA ID PDF print out

7. Retrieve Content Application

Under Construction: Place holder for future content

8. Maintenance

8.1 Backups:
There are multiple levels of backups. The entire system (i.e. system level backups) or just sub-components (i.e. the MIRTH configuration and database). Taking each in turn:

8.1.1 System:
the site can always use any standard backup tools they normally have. Or if there is no preference an excellent free choice is CloneZilla at http://clonezilla.org/

***8.1.2 MIRTH*:**
To backup Mirth you will need to backup both the Mirth database in PostgreSQL as well as the Mirth installation. To backup the Mirth database, open a command shell within Ubuntu and make a dump of the database by typing the following (these commands will prompt for the mirth database password):

```
pg_dump -h 127.0.0.1 -U mirth -W -C -f mirthdb.sql mirthdb

Note: the above syntax creates a .sql file that contains both the
database schema and the data. The -C option assures that the .sql file
can recreate the named database (as long as a placeholder of the same
name exists on PostgreSQL). If one desires only the schema and no data
(yet still have creation ability) one can use:
pg_dump -h 127.0.0.1 -U mirth -W -C -s -f mirthdb.sql mirthdb
```

To restore the Mirth database to PostgreSQL use the following command:

```
psql -h 127.0.0.1 -U mirth -W -d mirthdb < mirthdb.sql

Note: the above command will recreate the named database as long as
the database name exists in PostgreSQL (owner Edge)
```

To backup the Mirth installation, you will need to make a copy of the following directory:

```
/usr/local/edgeserver-1.0-SNAPSHOT/mirth
```

8.1.2 RSNA Database:
Within Ubuntu open a command shell. To make a dump of the RSNA database in PostgreSQL type (this command will prompt for the edge database password):

```
> pg_dump -h 127.0.0.1 -U edge  -W -C -f rsnadb.sql rsnadb
```

To restore the rsnadb to PostgreSQL use

```
> psql -h 127.0.0.1  -U edge -W -d rsnadb < rsnadb.sql
```

8.3 Help Desk:

If at any time you need assistance with the RSNA Edge Appliance feel free to email helpdesk@imgsharing.org or call 1-855-IM-SHARING (467-4274).

If you would like to escalate support you may also call (203) 981-0195