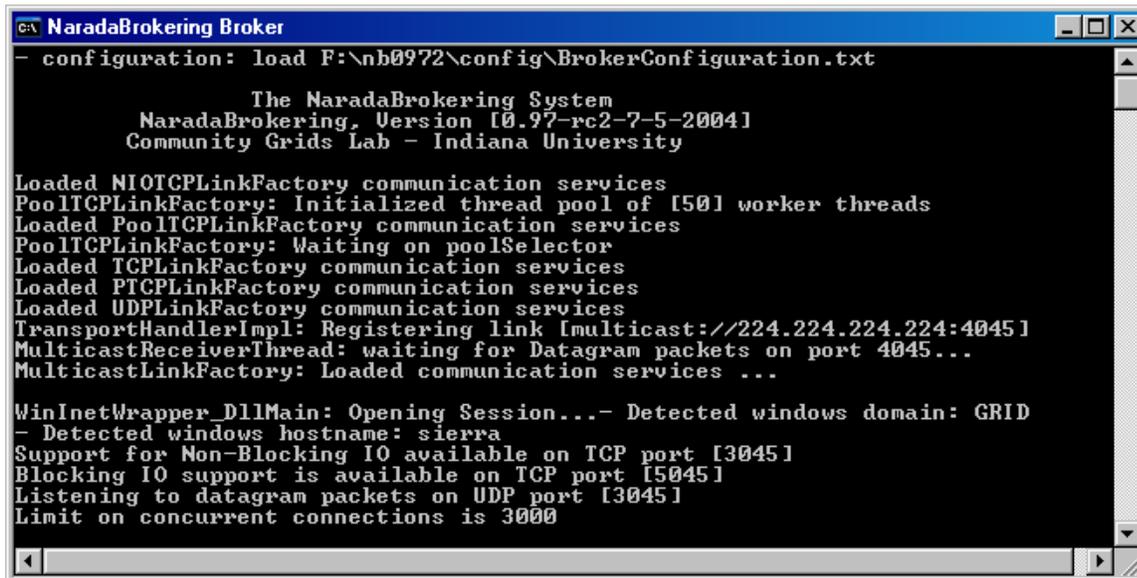


Click on broker.bat to start the broker



```
CA NaradaBrokering Broker
- configuration: load F:\nb0972\config\BrokerConfiguration.txt

      The NaradaBrokering System
      NaradaBrokering, Version [0.97-rc2-7-5-2004]
      Community Grids Lab - Indiana University

Loaded NIOTCPLinkFactory communication services
PoolTCPLinkFactory: Initialized thread pool of [50] worker threads
Loaded PoolTCPLinkFactory communication services
PoolTCPLinkFactory: Waiting on poolSelector
Loaded ICPLinkFactory communication services
Loaded PTCPLinkFactory communication services
Loaded UDPLinkFactory communication services
TransportHandlerImpl: Registering link [multicast://224.224.224.224:4045]
MulticastReceiverThread: waiting for Datagram packets on port 4045...
MulticastLinkFactory: Loaded communication services ...

WinInetWrapper_DllMain: Opening Session...- Detected windows domain: GRID
- Detected windows hostname: sierra
Support for Non-Blocking IO available on TCP port [3045]
Blocking IO support is available on TCP port [5045]
Listening to datagram packets on UDP port [3045]
Limit on concurrent connections is 3000
```

Example 1: Screen Shots

```

NB SimpleClient 1
- configuration: load D:\LAB-July2004\NaradaBrokering-0.97\config\ServiceConfigu
ration.txt
duration:0.8    50000    40000
FragmentationService: Fragmentation Directory value = D:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = D:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [D:\LAB-July2004\NaradaBrokerin
g-0.97\config\ServiceConfiguration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.Movie/Casablanca
Total offset computed at initialization: 9532
-

```

```

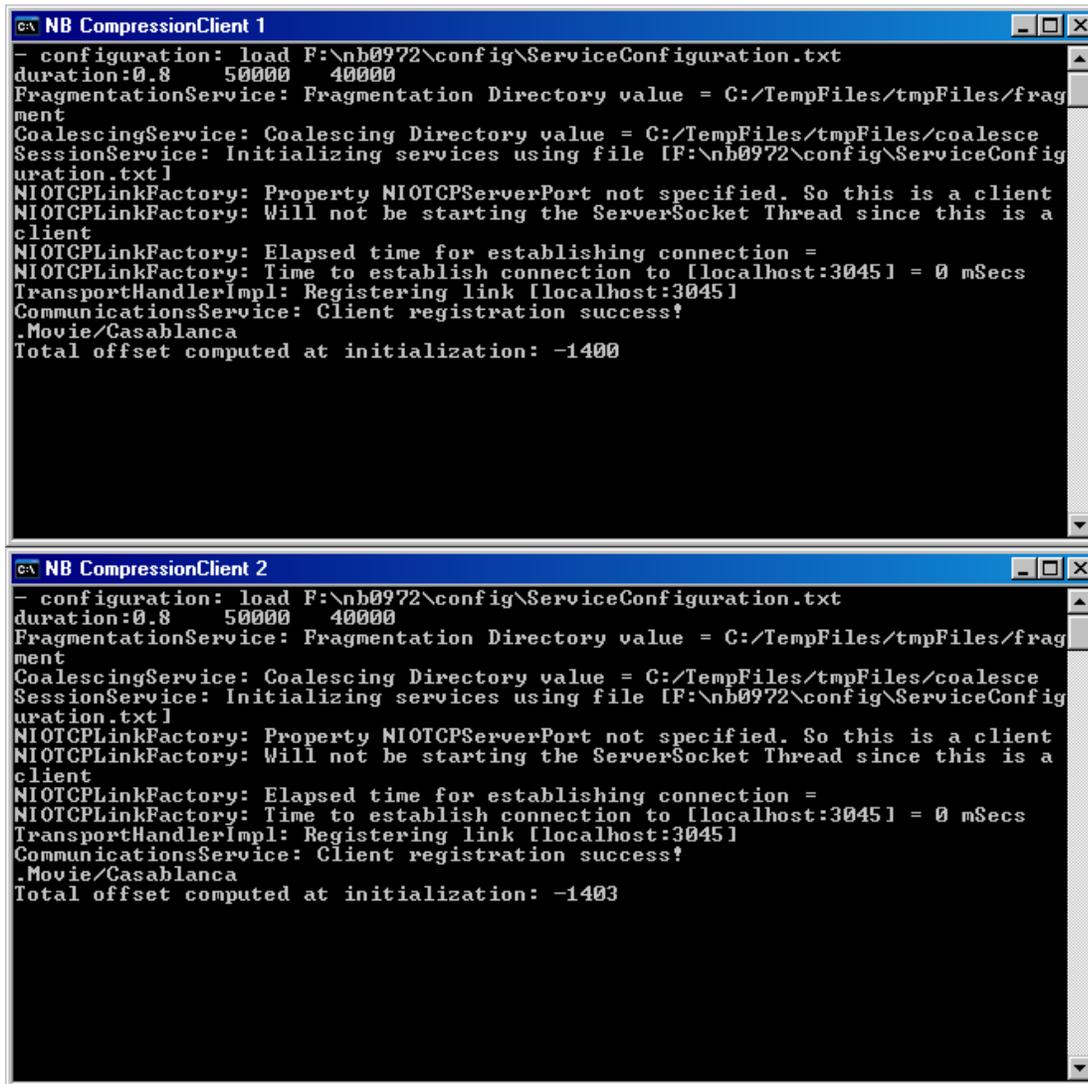
NB SimpleClient2
- configuration: load D:\LAB-July2004\NaradaBrokering-0.97\config\ServiceConfigu
ration.txt
duration:0.8    50000    40000
FragmentationService: Fragmentation Directory value = D:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = D:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [D:\LAB-July2004\NaradaBrokerin
g-0.97\config\ServiceConfiguration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.Movie/Casablanca
Total offset computed at initialization: 9535

```

```
NB SimpleClient 1
- configuration: load D:\LAB-July2004\NaradaBrokering-0.97\config\ServiceConfigu
ration.txt
duration:0.8    50000    40000
FragmentationService: Fragmentation Directory value = D:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = D:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [D:\LAB-July2004\NaradaBrokerin
g-0.97\config\ServiceConfiguration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.Movie/Casablanca
Total offset computed at initialization: 9532
hello there?
-
```

```
NB SimpleClient2
- configuration: load D:\LAB-July2004\NaradaBrokering-0.97\config\ServiceConfigu
ration.txt
duration:0.8    50000    40000
FragmentationService: Fragmentation Directory value = D:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = D:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [D:\LAB-July2004\NaradaBrokerin
g-0.97\config\ServiceConfiguration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.Movie/Casablanca
Total offset computed at initialization: 9535
SimpleClient: Received NBEvent hello there? [1]
-
```

Example 2: Screen Shots (Compression and Decompression)



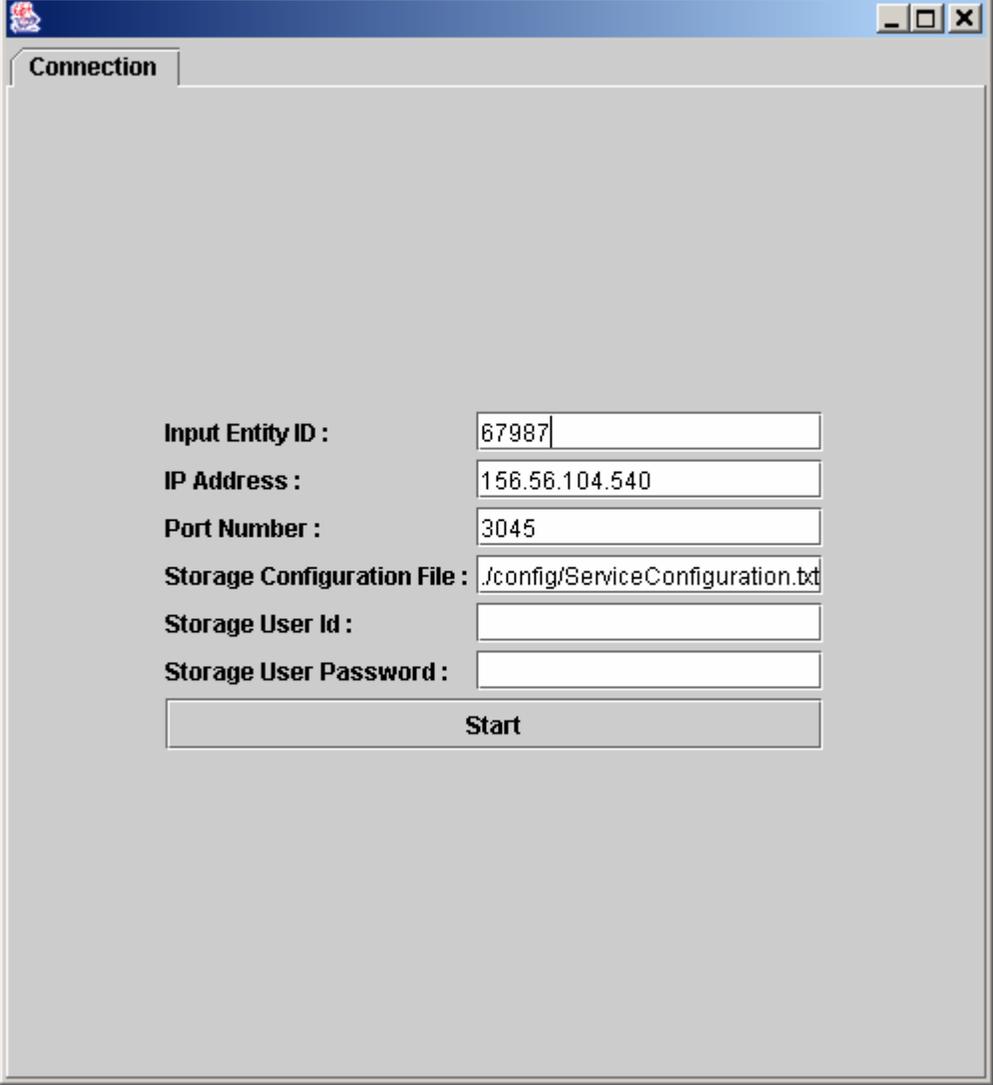
```
CA NB CompressionClient 1
- configuration: load F:\nb0972\config\ServiceConfiguration.txt
duration:0.8    50000    40000
FragmentationService: Fragmentation Directory value = C:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = C:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [F:\nb0972\config\ServiceConfig
uration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.Movie/Casablanca
Total offset computed at initialization: -1400

CA NB CompressionClient 2
- configuration: load F:\nb0972\config\ServiceConfiguration.txt
duration:0.8    50000    40000
FragmentationService: Fragmentation Directory value = C:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = C:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [F:\nb0972\config\ServiceConfig
uration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.Movie/Casablanca
Total offset computed at initialization: -1403
```


Example 3: Reliable delivery of events

Step 1: Double click **broker.bat** . This starts the broker.

Step 2: Next, double click **robustNode.bat** . This starts robust delivery service and the underlying stable storage. The GUI for this application is depicted below.



The screenshot shows a window titled "Connection" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains a form with the following fields and a button:

Input Entity ID :	<input type="text" value="67987"/>
IP Address :	<input type="text" value="156.56.104.540"/>
Port Number :	<input type="text" value="3045"/>
Storage Configuration File :	<input type="text" value="./config/ServiceConfiguration.txt"/>
Storage User Id :	<input type="text"/>
Storage User Password :	<input type="text"/>
<input type="button" value="Start"/>	

Figure 1: The opening screen

Specify the broker-**IP address** and the **Entity Id** (it could be anything e.g. 888) for the robust node. Proceed to press the **Start** button. If all goes well in the connection to the broker and the setup of the JDBC connections you will see the GUI depicted in **Figure 2**.

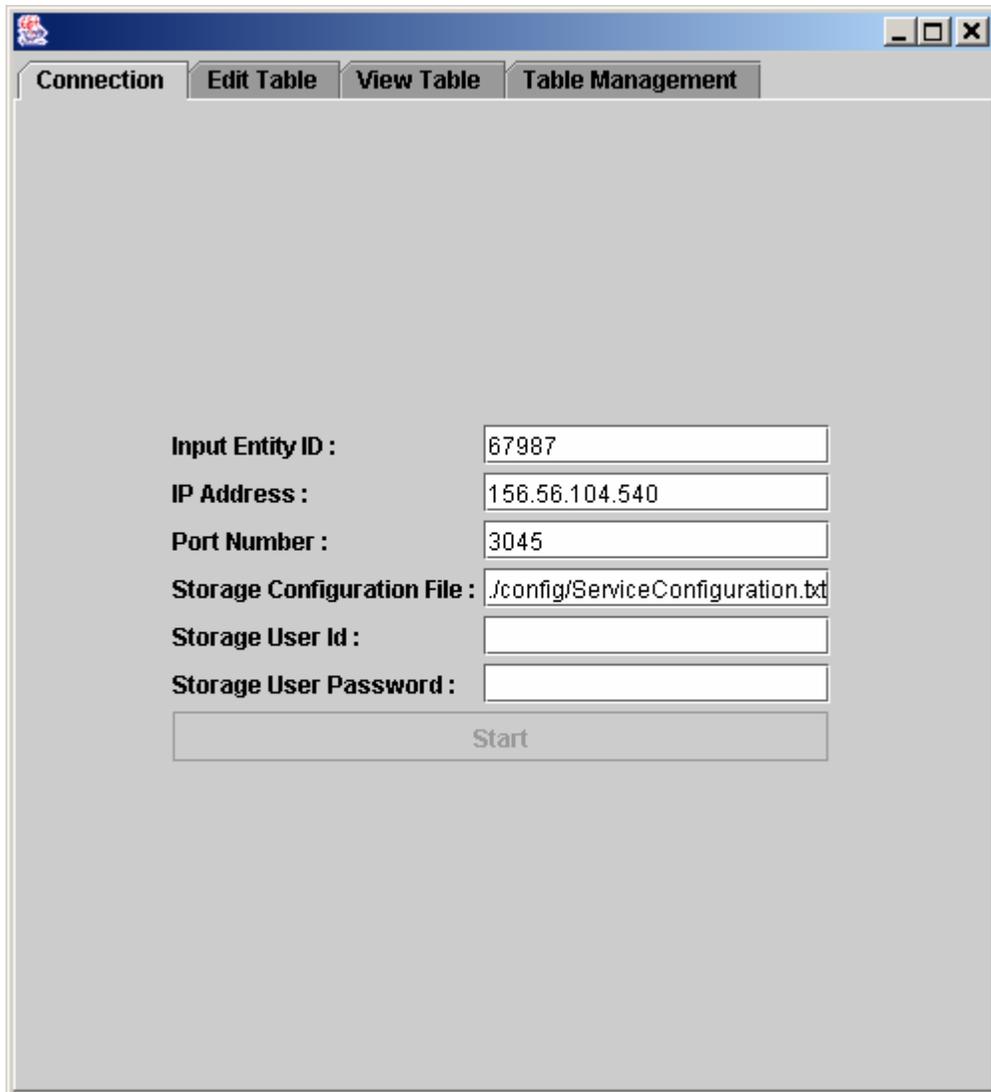


Figure 2: The GUI after the successful setup of the broker connection and the storage service

Proceed to click the **View Table** tab. If this is the first time that you are running this application everything will be empty and there will be no entries in the sub tabs that are available e.g. **Inventory**, **Template**, **Profile** and **EntityTemplate**.

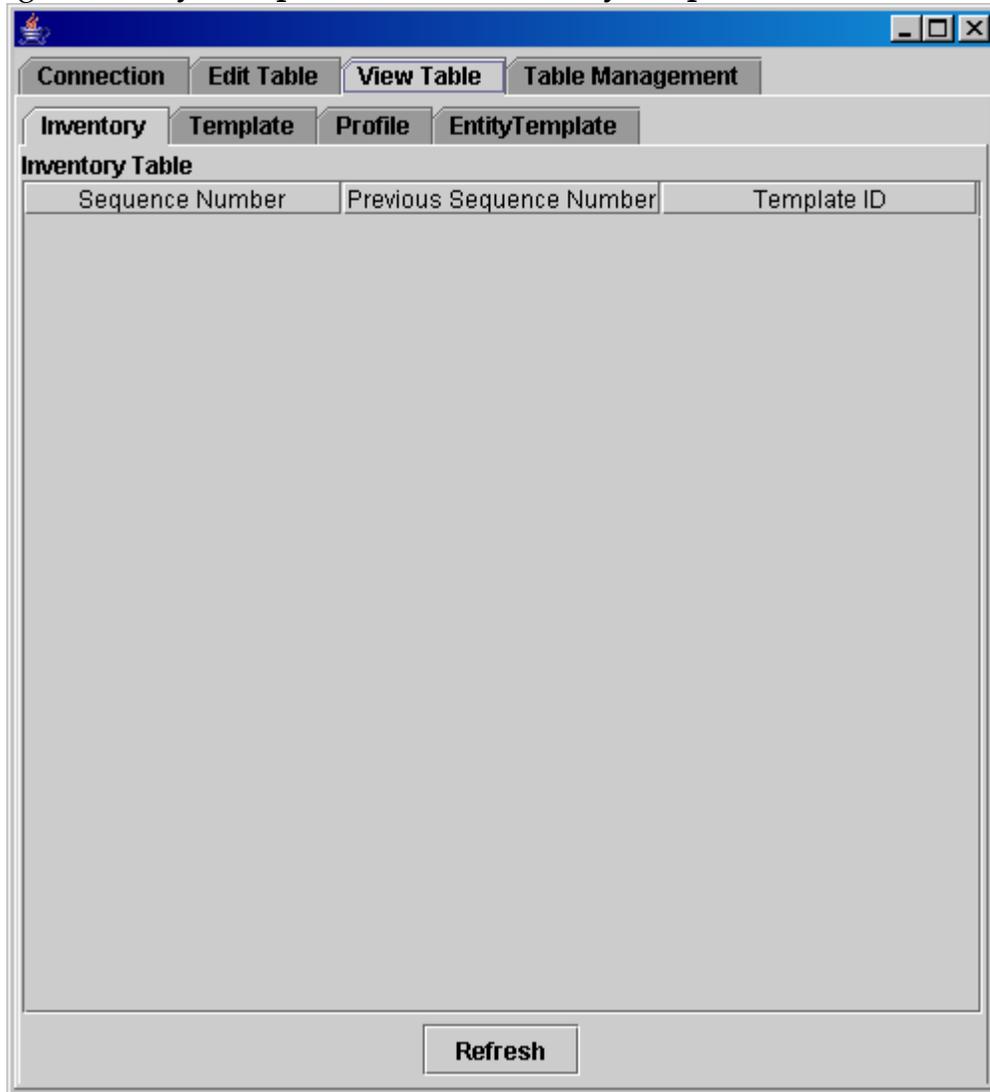


Figure 3: Viewing previously registered templates

The figure below depicts the scenario where there are no entities registered to any templates. In fact it is also possible (as can be seen by clicking the **Template** tab) that there are no registered templates. If this is the case proceed to add entries regarding the template, entity and register an entity to the template in question. To add information regarding the entities, templates etc. click on the **Edit Table** tab. The screen that is displayed is depicted below.

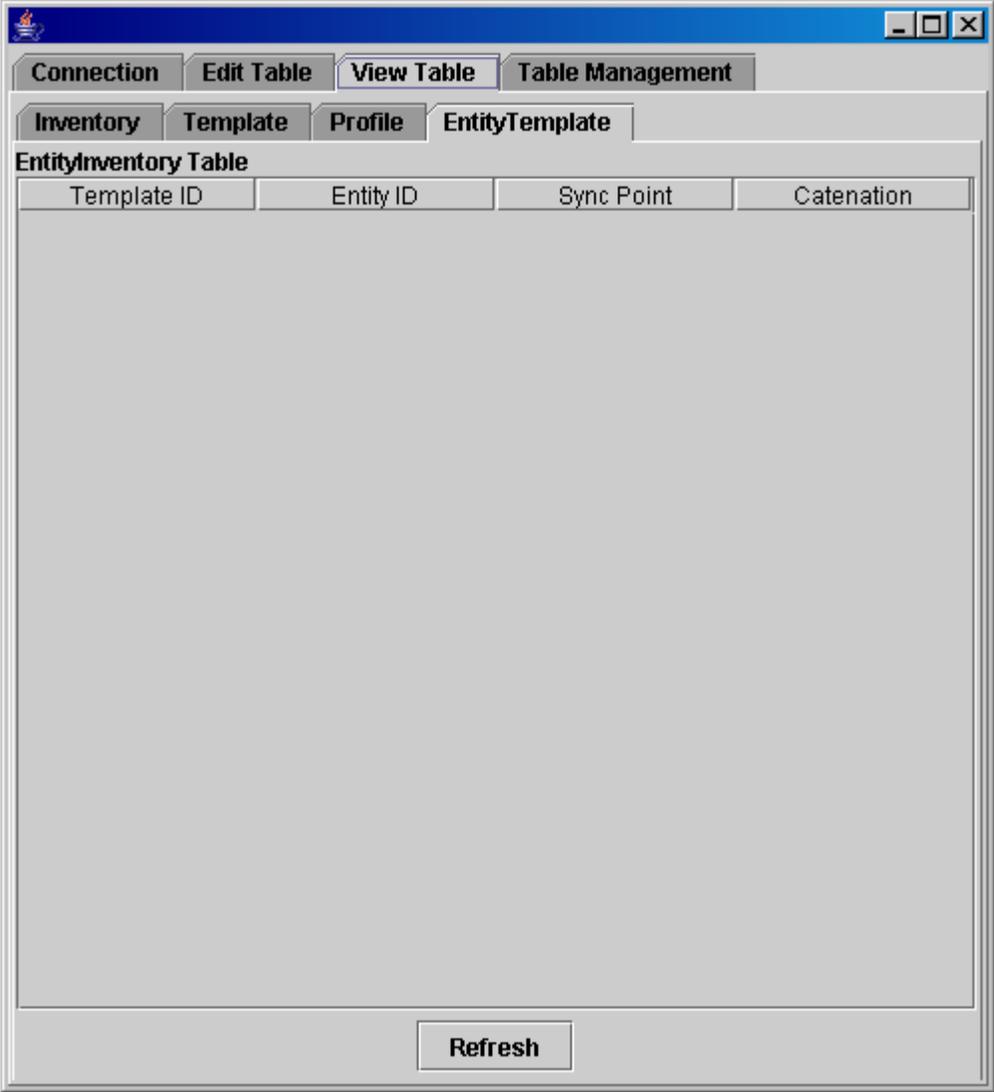


Figure 4: Viewing the templates and entities registered to these templates.

The screen that comes up when you click on the **Edit Table** tab is depicted below. First you need to add the right template in question. Proceed to click on the **Edit Template** tab.

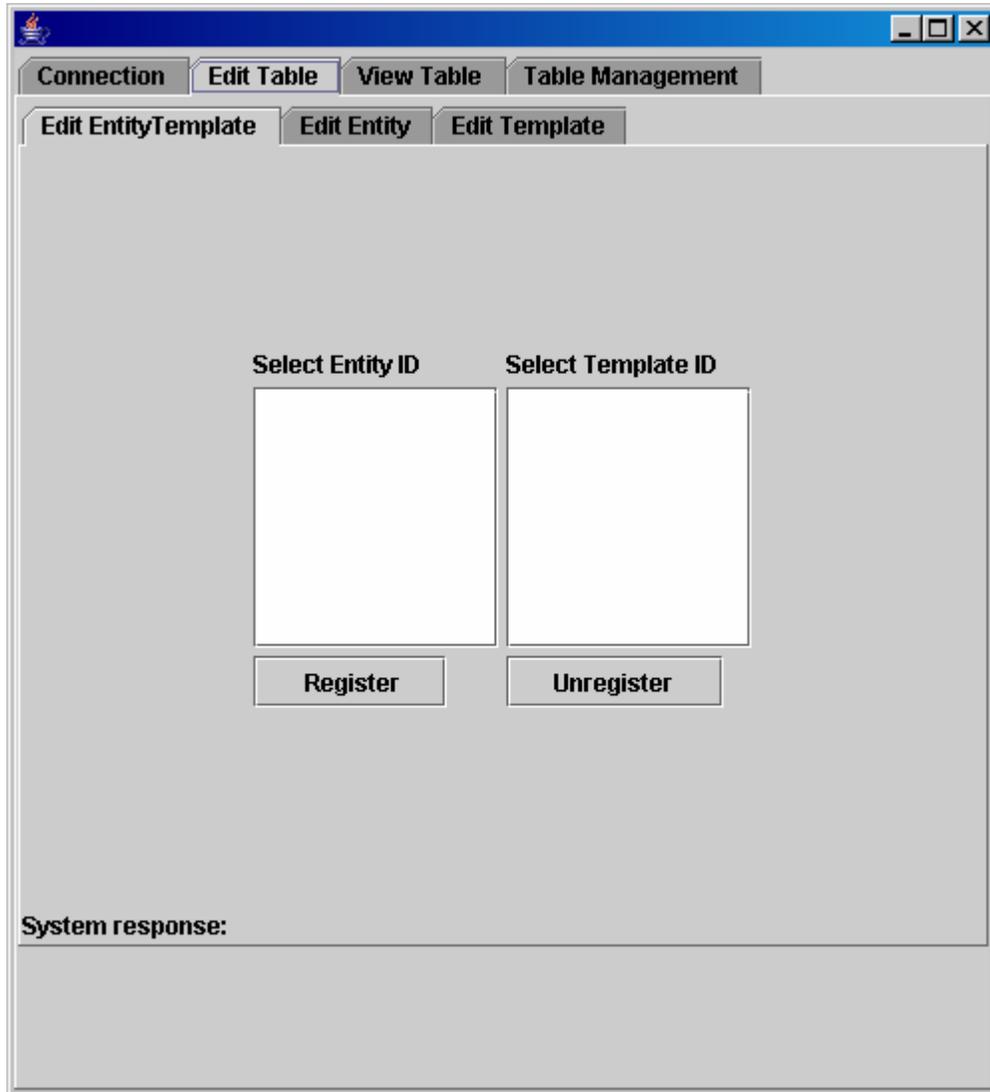


Figure 5: The Edit Table screen with sub tabs for registrations

The screen that is displayed when you click the **Edit Template** tab is depicted below. The default that is displayed is **Movies/Casablanca** with a **templateId** of **11111**. Note that for the **GridFTP** demo you will have to remove the **s** from **Movies** and have the string as **Movie/Casablanca** iff you are setting up the GridFTP from scratch.

Connection Edit Table View Table Table Management

Edit EntityTemplate Edit Entity Edit Template

Template Type : String XML Integer
 Regular Expression Tag Value Pairs

Template Id : 11111

Template content : Movies/Casablanca

add template

Select templateId

remove template

System response:

Figure 6: Registering a new template - Initial screen

Next proceed to click the **Edit Entity** Tab. The screen that is now displayed is depicted below. The display depicts the entries currently available. We are interested in adding entities with ID 4444 and 5555. If you don't see the entries in the list proceed to register the entities. **Note that this is a one-time operation and you will not need to do this again until the database/file-system is cleared.**

Connection Edit Table View Table Table Management

Edit EntityTemplate Edit Entity Edit Template

Input Register Entity Register

Select Deregister Entity Deregister

System response:

Figure 7: The screen for editing entity entries.

The figure below depicts the process of adding entities 4444 and 5555. Next we need to register these entities to the templateId in question. For this you need to click on the **Entity EntityTemplate** tab.

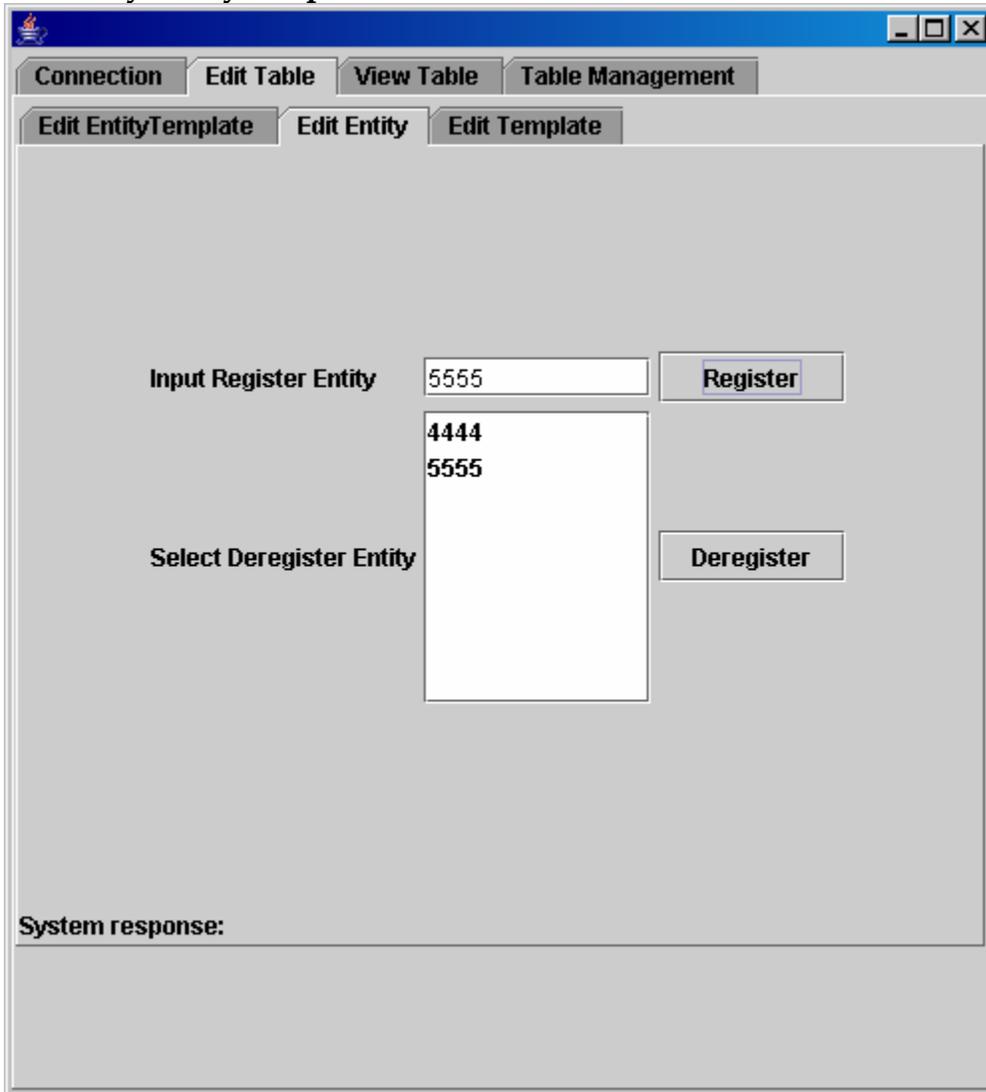


Figure 8: The screen after adding entries for entity 4444 and 5555

Next, proceed to register entities to a template by clicking on the **Edit Entity Template** tab. The screen below shows the registering of an entry to a template. The highlighted items indicate the entity and templateId for which registration/deregistration would be performed when the appropriate buttons are pressed.

The figure below depicts entity 4444 being registered to templateID 11111

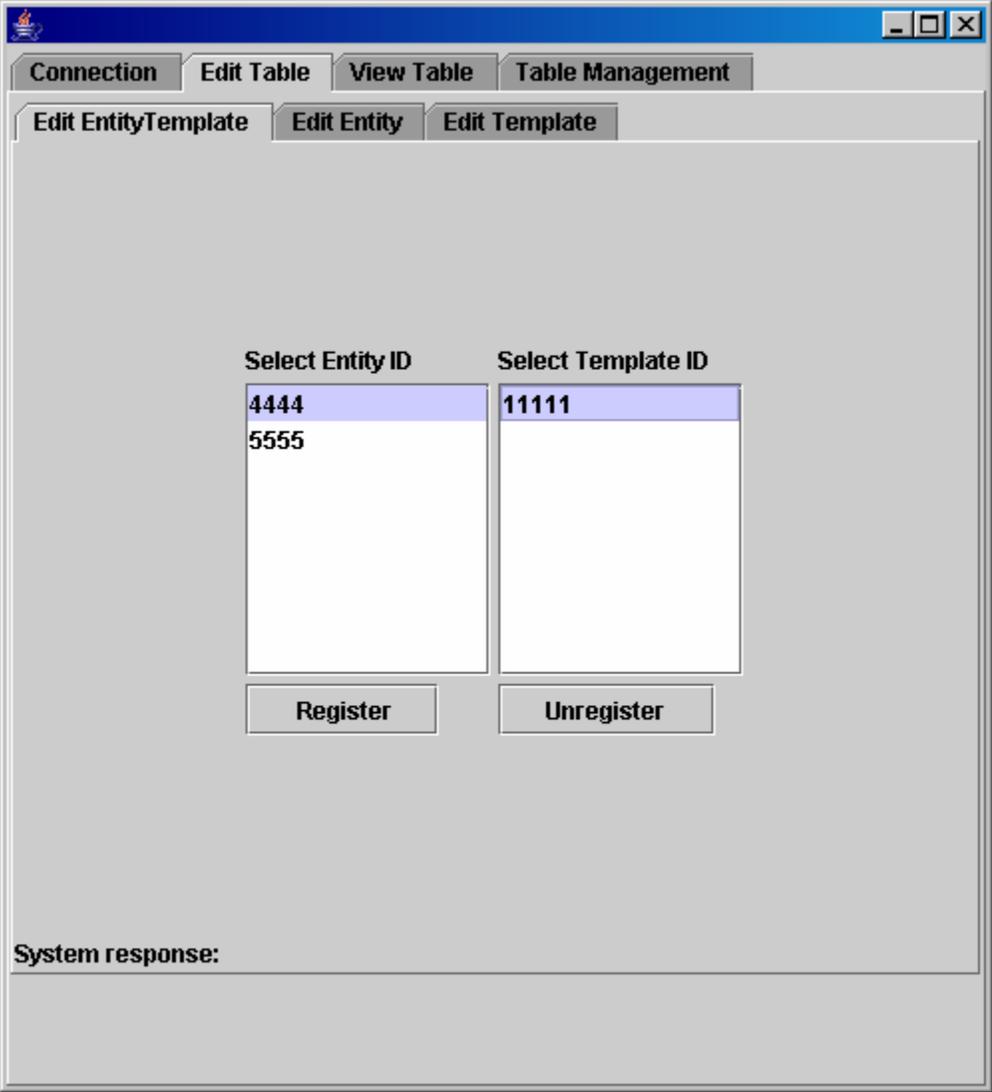


Figure 9: The screen for registering an entity to a template

The figure below depicts entity 5555 being registered to templateID 11111

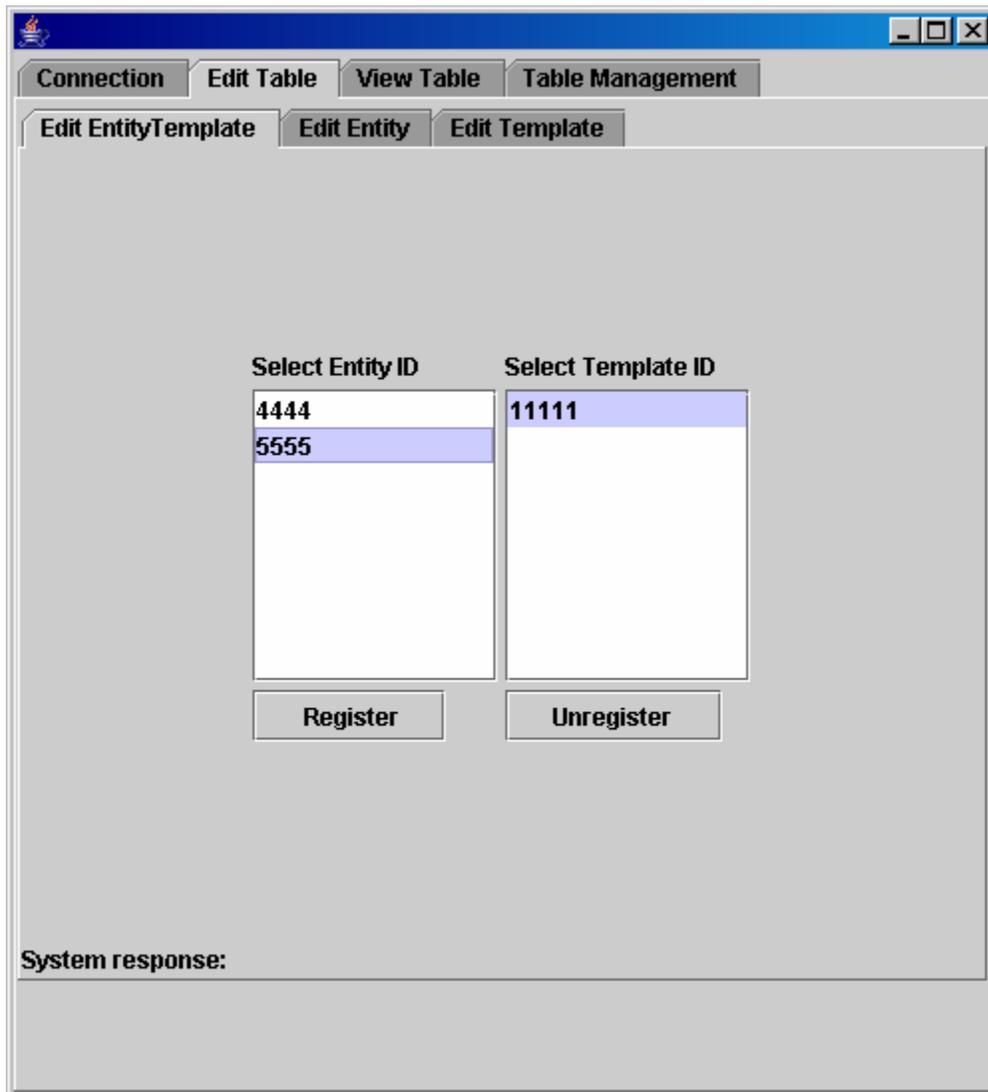
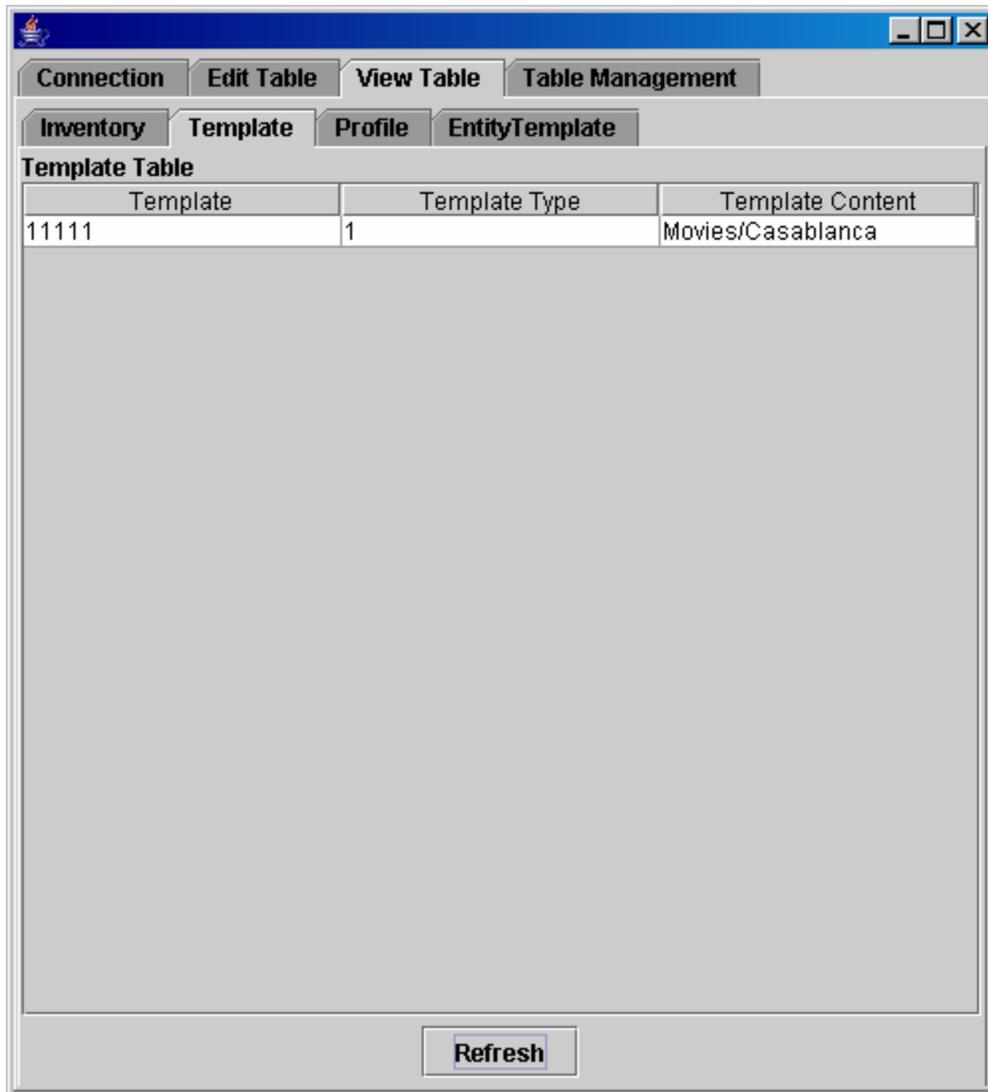


Figure 10: Another example depicting the registration of an entity to a template

Note that the registration process involving entities, templates and entities-to-templates is a one time operation for the life of the application. You need not repeat the set of instructions detailed earlier if you are returning from a scheduled downtime or a failure. The operations need to be repeated ONLY if you have explicitly deregistered the entity, template or entities-from-the-template.

The figure below shows the screen, which allows one to see the templates that were registered.

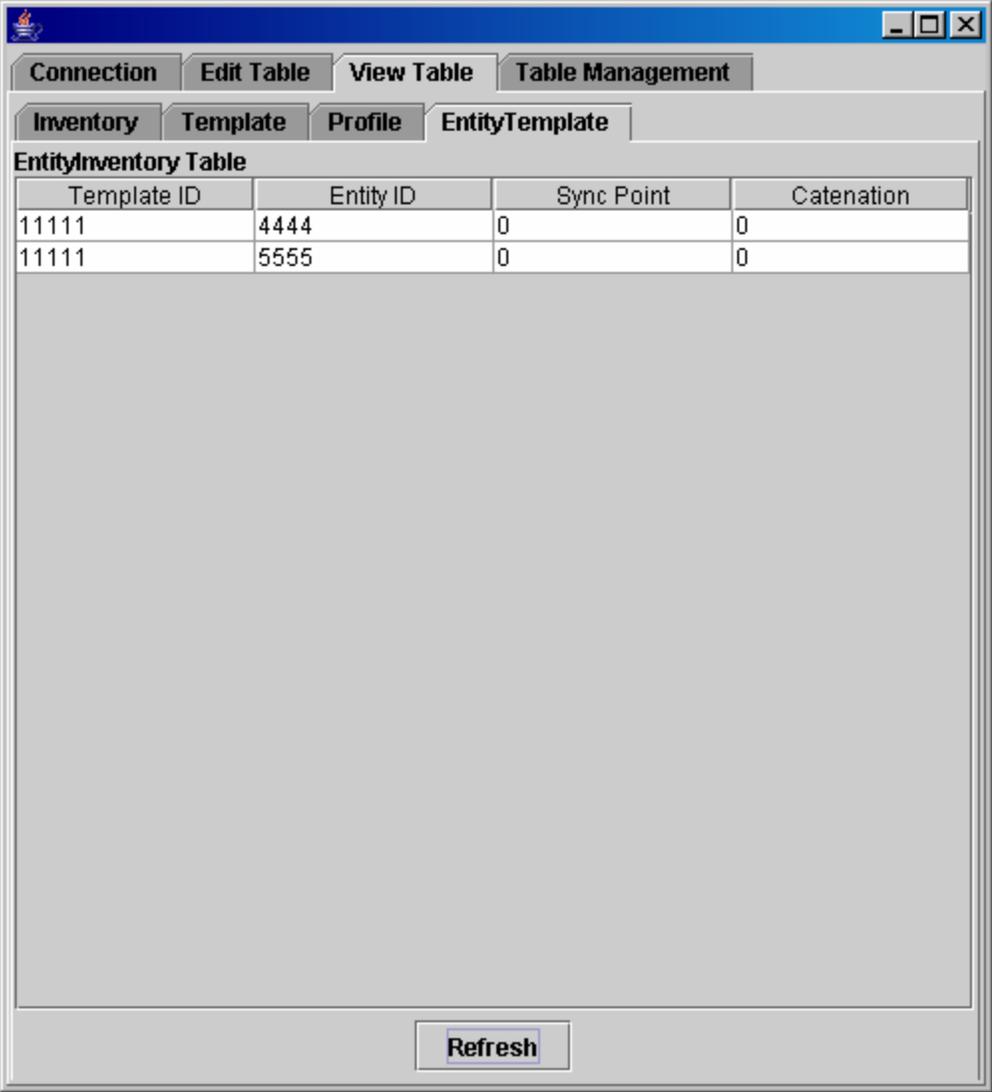


The screenshot shows a software window with a blue title bar and standard Windows window controls. The window contains a tabbed interface with the following tabs: 'Connection', 'Edit Table', 'View Table', and 'Table Management'. Underneath, there are sub-tabs: 'Inventory', 'Template', 'Profile', and 'EntityTemplate'. The 'Template' sub-tab is active, displaying a table titled 'Template Table'. The table has three columns: 'Template', 'Template Type', and 'Template Content'. A single row of data is visible, with the values '11111', '1', and 'Movies/Casablanca' respectively. At the bottom center of the window, there is a 'Refresh' button.

Template	Template Type	Template Content
11111	1	Movies/Casablanca

Figure 11: Viewing the registered templates

The figure below depicts the entity and the templates that they are registered to.



The screenshot shows a software window with a menu bar containing 'Connection', 'Edit Table', 'View Table', and 'Table Management'. Below the menu bar are tabs for 'Inventory', 'Template', 'Profile', and 'EntityTemplate'. The 'EntityTemplate' tab is active, displaying a table titled 'EntityInventory Table'. The table has four columns: 'Template ID', 'Entity ID', 'Sync Point', and 'Catenation'. There are two rows of data. Below the table is a large grey area and a 'Refresh' button at the bottom center.

Template ID	Entity ID	Sync Point	Catenation
11111	4444	0	0
11111	5555	0	0

Figure 12: Viewing entities and the templates that they are registered to

Now we proceed to running the robust subscriber. When you click on the **RobustSub.bat** file this is the GUI through which your actions are initiated. In the connection screen you need to enter the hostname and port number information.

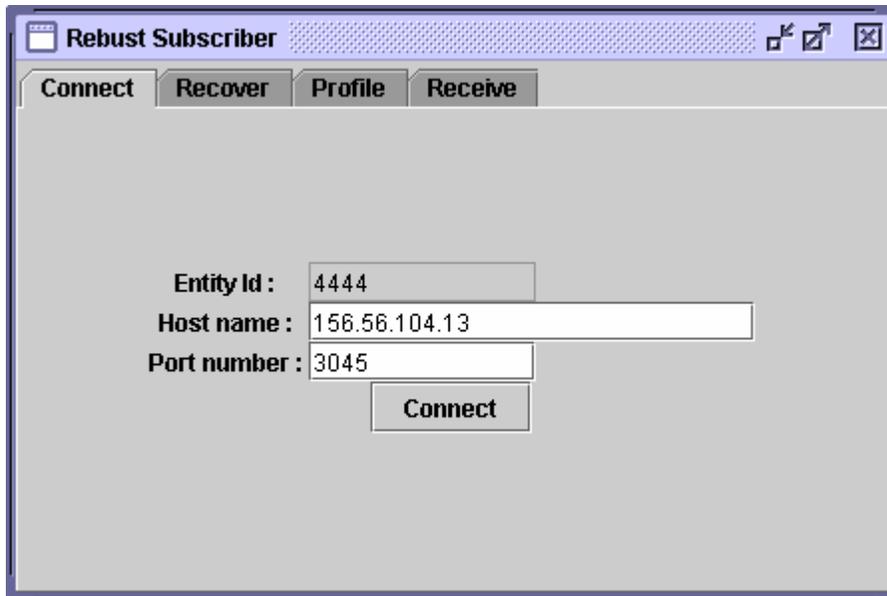


Figure 13: The robust subscriber GUI -- Connect Tab

The figure below depicts the recovery screen. You need to specify the **templateId** (11111) on which you are going to recover. If you had previously subscribed, you will automatically be registered to those subscriptions. However, since the first time you need to specify your subscription.

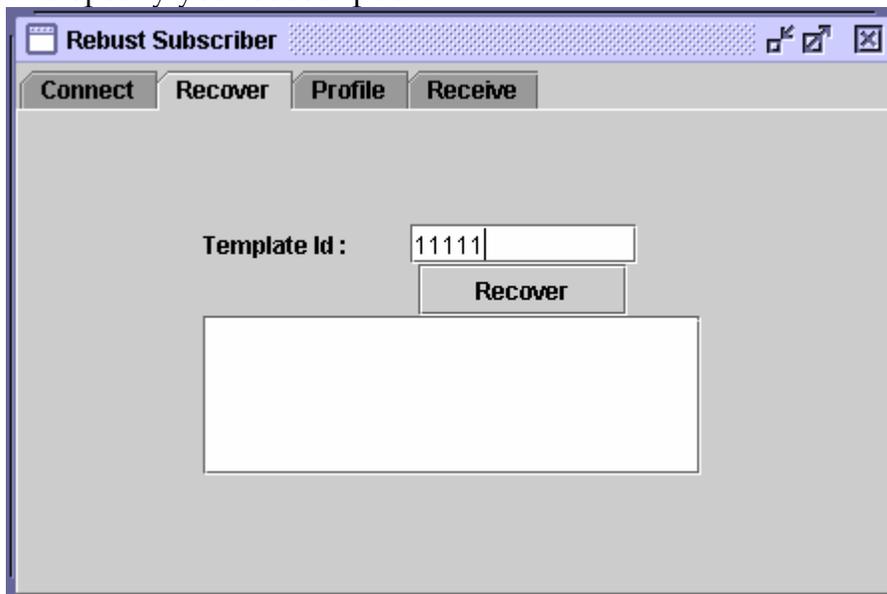


Figure 14: The robust subscriber recovery screen

The subscription profile screen is depicted below. Here you need to specify both the **templateId** (11111) and the **subscription** (Movies/Casablanca).

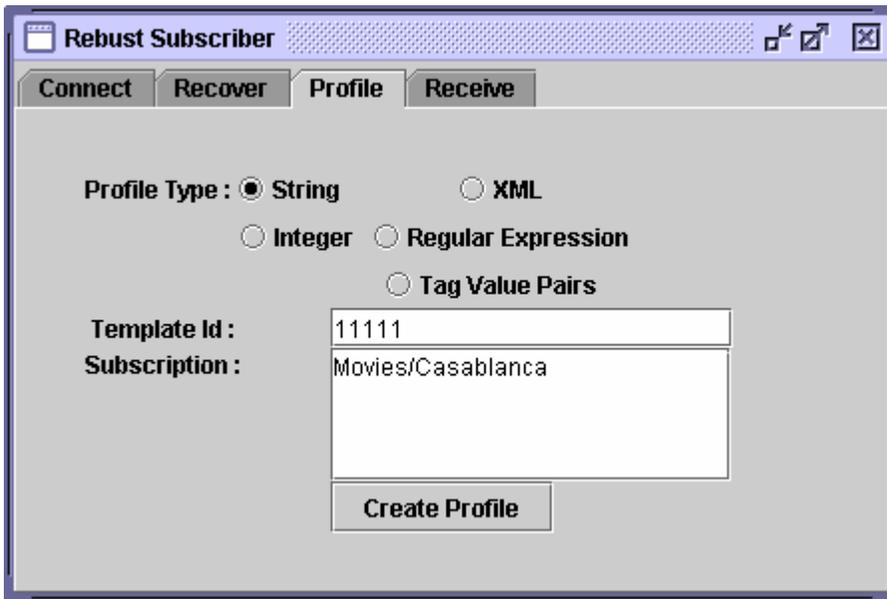


Figure 15: Robust Subscriber - Subscription screen

The figure below depicts the scenario where, if you had previously registered a subscription, you will automatically be registered to that subscription. This obviates the need to subscribe using the **Profile** screen.

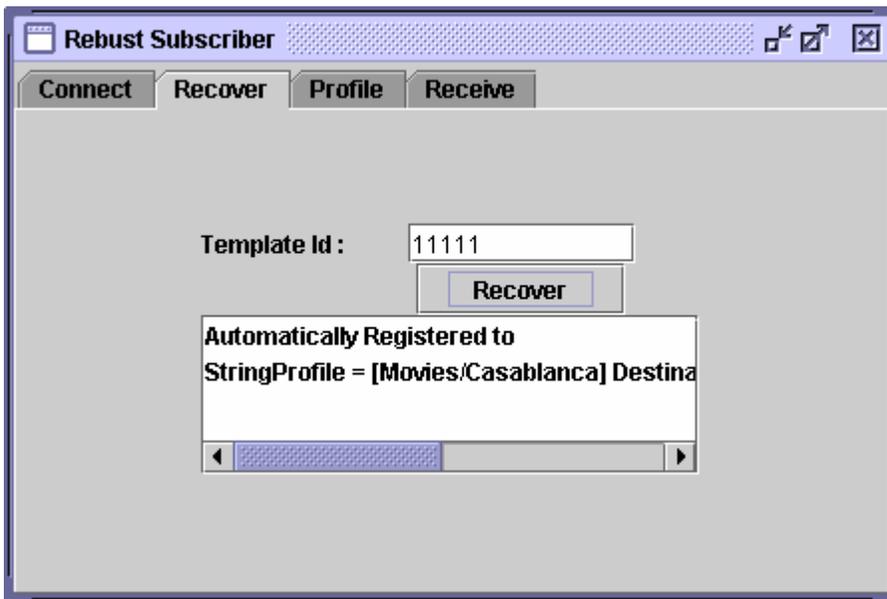


Figure 16: Robust Subscriber - Recovery screen depicting automatic subscriptions

The publisher publishing screen is similar to what's available for the robust subscriber.

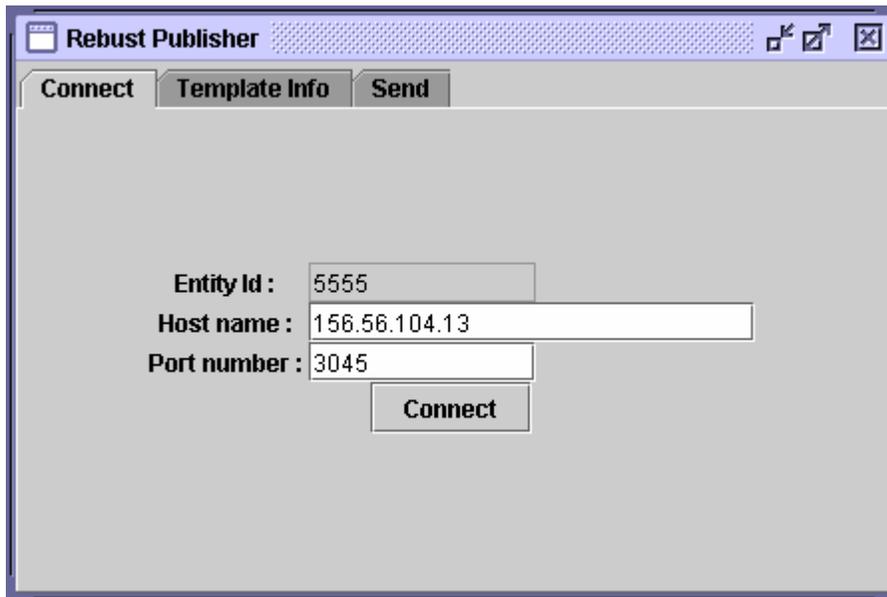


Figure 17: RobustPublisher - Connection Screen

Specify the **templateId** (11111) and the **template** (Movies/Casablanca) of the events that the robust publisher will publish.

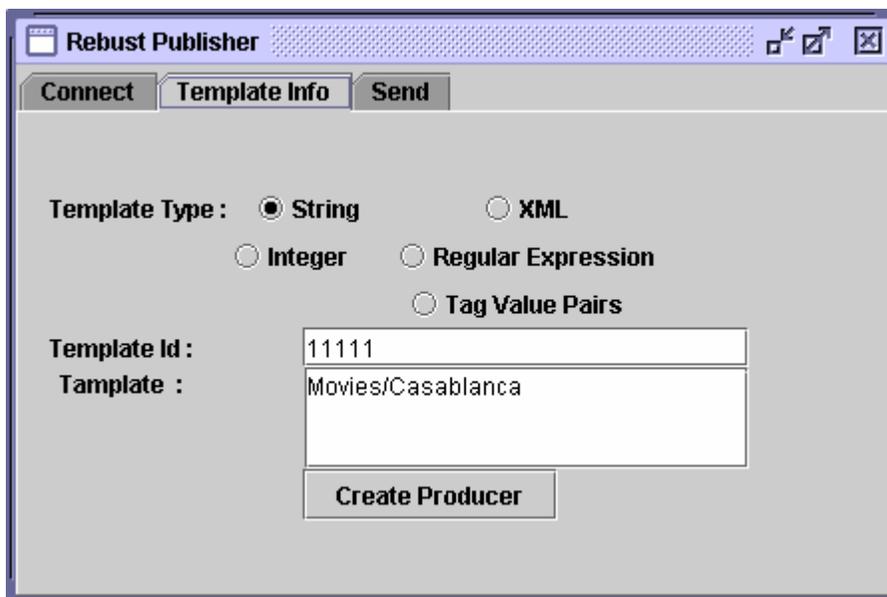


Figure 18: RobustPublisher - TemplateInfo screen

The figure below depicts the scenario where a publisher publishes a message and the robust subscriber receives it.

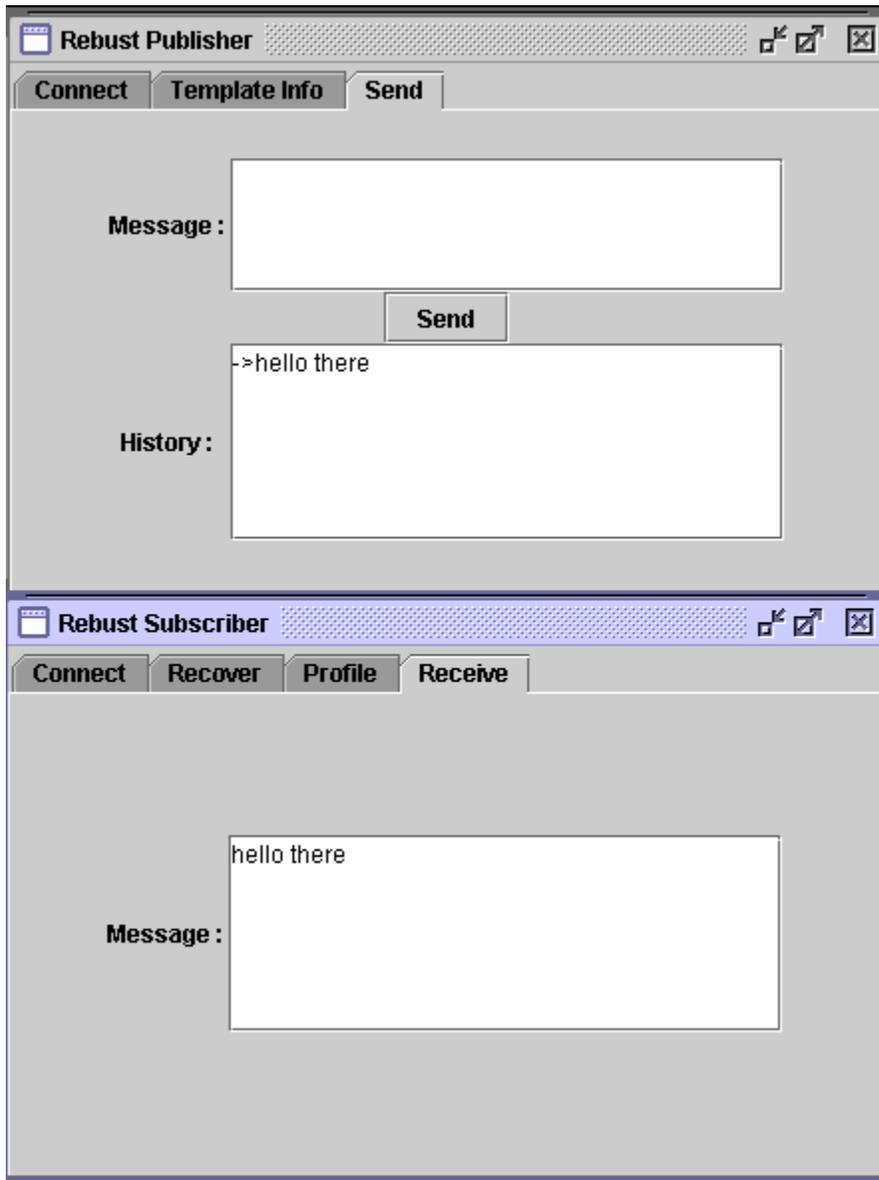
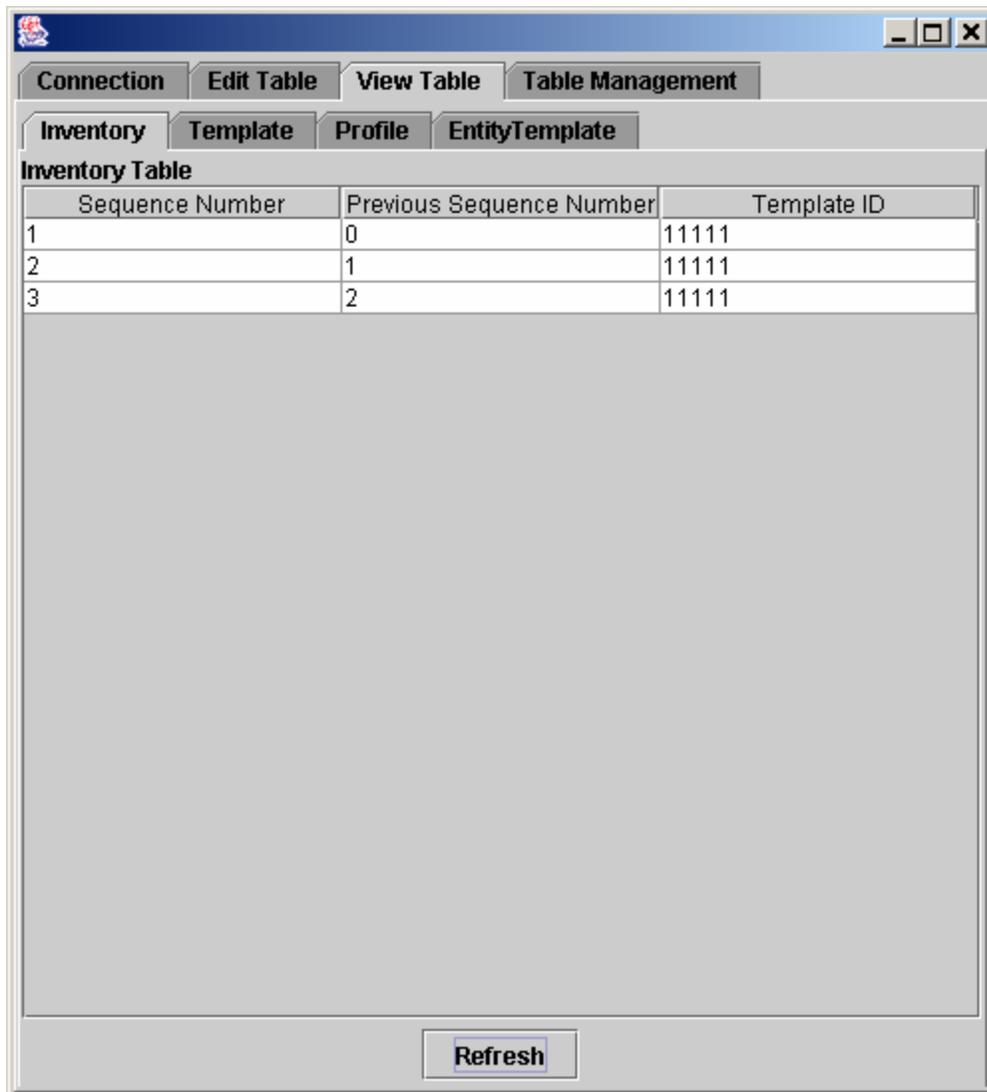


Figure 19: Publisher sending events and receiver receiving them

Example 4: Replay Client

Make sure that the subscriber in the previous case has subscribed and retrieved events. You can also click the View Table -> Inventory tab of the RDS node to confirm that you do have sequences that match your replay query. Here you can see that there are 3 events with sequence numbers 1, 2, 3 that are for templateId 11111. Make sure that the subscriber in the earlier demo had subscribed to events.



The screenshot shows a window titled 'Inventory Table' with a table containing 3 rows. The table has three columns: 'Sequence Number', 'Previous Sequence Number', and 'Template ID'. The data is as follows:

Sequence Number	Previous Sequence Number	Template ID
1	0	11111
2	1	11111
3	2	11111

At the bottom of the window, there is a 'Refresh' button.

```

NB Replay Client (Specify range to replay for templateId 11111)
ration.txt
duration:0.8 50000 40000
FragmentationService: Fragmentation Directory value = D:/TempFiles/tmpFiles/frag
ment
CoalescingService: Coalescing Directory value = D:/TempFiles/tmpFiles/coalesce
SessionService: Initializing services using file [D:\LAB-July2004\NaradaBrokerin
g-0.97\config\ServiceConfiguration.txt]
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success?
-
Total offset computed at initialization: 9515

h

Usage:
r <start> <end> ---> start,end indicate range of values to be replayed

```

```

NB Replay Client (Specify range to replay for templateId 11111)
num 1 3
r 1 3
4444/ReplayServices
[1] [2] [3]

ReplayClient: TemplateId=11111, EntityId=4444, Replay Identifier=9ed5c790-2894-4
a08-9bdf-a671bdd56e7c, Success: Additional Info=>There were (3) that were consid
ered for replay. Since no additional constraints have been specified, the repla
y service will route all the sequences
There are (3) sequences to replay ->

ReplayClient: hey there

ReplayClient: hello

ReplayClient: how are you

```

Example 5: Coalescing and Fragmentation Services:

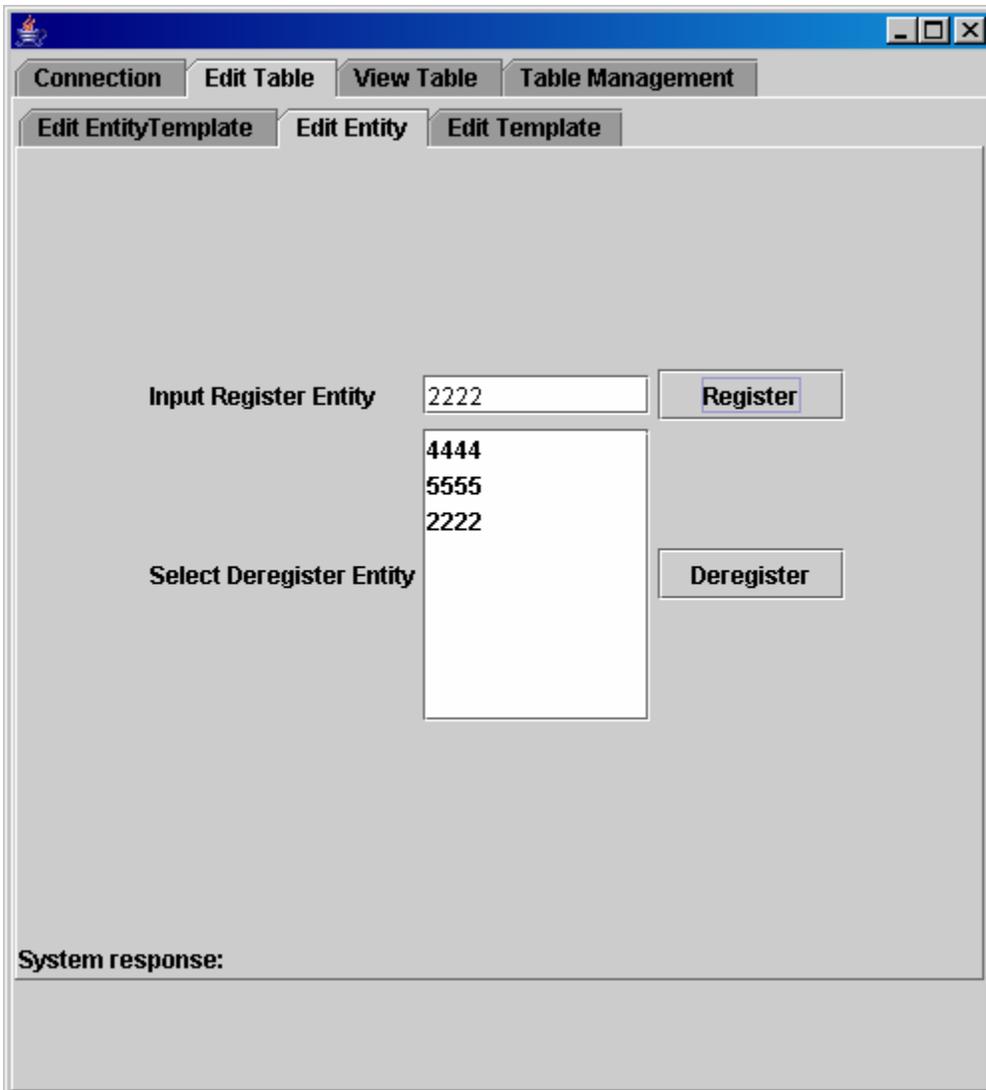
The following screenshots depict the process of creating the right templateId, topic and entities to make the examples work.

TemplateId=54321 Topic=Sports/NBA

EntityIds=2222 and 3333

The screenshot shows a web application window with a blue title bar and standard window controls. The interface has several tabs: 'Connection', 'Edit Table', 'View Table', and 'Table Management'. Underneath, there are three sub-tabs: 'Edit EntityTemplate', 'Edit Entity', and 'Edit Template', with 'Edit Template' being the active tab. The main content area contains the following elements:

- Template Type:** A group of radio buttons with 'String' selected. Other options are 'XML' and 'Integer'. Below this are two more radio buttons: 'Regular Expression' and 'Tag Value Pairs'.
- Template Id:** A text input field containing the value '54321'.
- Template content:** A large text area containing the text 'Sports/NBA'.
- add template:** A button with a blue border and the text 'add template'.
- Select templateId:** A list box containing the values '11111' and '54321'.
- remove template:** A button with the text 'remove template'.
- System response:** A label at the bottom of the form area.



Connection Edit Table View Table Table Management

Edit EntityTemplate Edit Entity Edit Template

Input Register Entity 3333 Register

Select Deregister Entity 4444
5555
2222
3333 Deregister

System response:

Connection Edit Table View Table Table Management

Edit EntityTemplate Edit Entity Edit Template

Select Entity ID	Select Template ID
4444	11111
5555	54321
2222	
3333	

Register Unregister

System response:

Connection Edit Table View Table Table Management

Edit EntityTemplate Edit Entity Edit Template

Select Entity ID	Select Template ID
4444	11111
5555	54321
2222	
3333	

Register Unregister

System response:

```
ca NB Coalescing Client

Profile update request was not successful
->ReliableDeliveryServiceImpl: Profile [StringProfile = [Sports/NBA] Destinations = [3333Id = [Sports/NBA<>3333]] was previously registered!
SubscriberPercolator: Received recovery response with SubscriberInfo
InvoicerThread: There were no missing sequences on template [54321]. Recovery process is thus complete!
RdEntityActuatorImpl: ->EventConsumerImpl: Profile is already registered StringProfile = [Sports/NBA] Destinations = [3333Id = [Sports/NBA<>3333]]

CoalescingClient: NBRecoveryNotification:
  EntityId=3333, TemplateId=54321, RecoveryId=1090346748390 SUCCESS=true
  The following profiles were PREVIOUSLY registered
  StringProfile = [Sports/NBA] Destinations = [3333Id = [Sports/NBA<>3333]]
  Entity has been automatically subscribed to all previously registered profiles

Total offset computed at initialization: -1402
```

```
ca NB Fragmentation Client

NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]
CommunicationsService: Client registration success!
.2222/Negotiations
2222/Recovery/Publisher
FragmentationClient: Assigned recovery id = [1090346865843]

FragmentationClient.main() ->Type h for usage options

FragmentationService: C:\TempFiles\tmpFiles\fragment is NOT a directory.
FragmentationClient: NBRecoveryNotification:
  EntityId=2222, TemplateId=54321, RecoveryId=1090346865843 SUCCESS=true
  Recovery process updated the publishers catenation number to [0]

Total offset computed at initialization: -1404
h
Usage: One of two possible modes
num <fileName> <numOfFragments> ----> Fragment based on the num of fragments
size <fileName> <fragmentSize> ----> Fragment based on the size of fragments
```

```
ca NB Fragmentation Client

num sqlManual.html 10
FragmentationService: The specified file [sqlManual.html] is of length = 3167480

FragmentationService: Beginning fragmentation process!
FragmentationService: Will create and store fragments to [C:/TempFiles/tmpFiles/
fragment/sqlManual.html-tempDir1
FragmentationService: Total bytes written = 3167480
Original File Location: sqlManual.html
Total Number of Fragments: 10
Fragment Size: 316748
Last Fragment Size: 316748
Event's Content Synopsis Sports/NBA

FragmentationService: Fragmentation process complete ..
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment1.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment2.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment3.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment4.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment5.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment6.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment7.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment8.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment9.nbil deleted!
FragmentationService: FragmentInfo file [C:\TempFiles\tmpFiles\fragment\sqlManua
l.html-tempDir\Fragment10.nbil deleted!
```

```
ca NB Coalescing Client

CoalescingService: Processing fragment (10) of file=sqlManual.html
CoalescingService: Wrote fragment [fragment10.nbf] of size = (316748)
CoalescingService: Fragments are available for coalescing The coalesced file is
of size = 3167480

CoalescingService: Will delete (10) fragments
CoalescingService: Deleting [fragment1.nbf]
CoalescingService: Deleting [fragment2.nbf]
CoalescingService: Deleting [fragment3.nbf]
CoalescingService: Deleting [fragment4.nbf]
CoalescingService: Deleting [fragment5.nbf]
CoalescingService: Deleting [fragment6.nbf]
CoalescingService: Deleting [fragment7.nbf]
CoalescingService: Deleting [fragment8.nbf]
CoalescingService: Deleting [fragment9.nbf]
CoalescingService: Deleting [fragment10.nbf]

CoalescingService: Created coalesced file ->C:\TempFiles\tmpFiles\coalesce/sqlMa
nual.html

CoalescingClient: Received COALESCED file [C:\TempFiles\tmpFiles\coalesce/sqlMan
ual.html] of length=3167480
CoalescingService: Total Memory Utilization is [5824512] bytes
-
```

Example 6: JMS application

```
CA JMS Client1
Type h for usage options
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]

JmsTopicConnectionFactory: Waiting for initialization of the JMS bridge .
Initialization of the bridge [id:1090347763154] complete after <20> milliseconds

Will be publishing to topic [/streams/chat/private/Text]
Subscribing to [/streams/chat/private/Text]
```

```
CA JMS Client2
Type h for usage options
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]

JmsTopicConnectionFactory: Waiting for initialization of the JMS bridge .
Initialization of the bridge [id:1090347764466] complete after <20> milliseconds

Will be publishing to topic [/streams/chat/private/Text]
Subscribing to [/streams/chat/private/Text]
-
```

```
ca JMS Client1
Type h for usage options
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]

JmsTopicConnectionFactory: Waiting for initialization of the JMS bridge .
Initialization of the bridge [id:1090347763154] complete after <20> milliseconds

Will be publishing to topic [/streams/chat/private/Text]
Subscribing to [/streams/chat/private/Text]
[john] : Hello there <1>
hi
[tom] : hi <1>
```

```
ca JMS Client2
Type h for usage options
NIOTCPLinkFactory: Property NIOTCPServerPort not specified. So this is a client
NIOTCPLinkFactory: Will not be starting the ServerSocket Thread since this is a
client
NIOTCPLinkFactory: Elapsed time for establishing connection =
NIOTCPLinkFactory: Time to establish connection to [localhost:3045] = 0 mSecs
TransportHandlerImpl: Registering link [localhost:3045]

JmsTopicConnectionFactory: Waiting for initialization of the JMS bridge .
Initialization of the bridge [id:1090347764466] complete after <20> milliseconds

Will be publishing to topic [/streams/chat/private/Text]
Subscribing to [/streams/chat/private/Text]
Hello there
[john] : Hello there <1>
[tom] : hi <1>
```