

# Radioactivity Project Deployment

[RadioactivityProjectDeployment.htm - uq1payne 22 Aug 2013]

---

## Contents

- [Requirements](#)
  - [GlassFish Server Administration Console](#)
  - [Deploy Radioactivity LabEquipment](#)
  - [Deploy Radioactivity LabServer](#)
  - [Deploy Radioactivity LabClient](#)
  - [Deploy Radioactivity LabClient Rest](#)
  - [Deploy Dummy ServiceBroker](#)
  - [Launch Radioactivity LabEquipment](#)
  - [Launch Radioactivity LabServer](#)
  - [Launch Dummy ServiceBroker](#)
  - [Launch Radioactivity LabClient](#)
  - [Launch Radioactivity LabClient Rest](#)
- 

## Requirements

- The *GlassFish Server Open Source Edition 4.0* is installed and running.
  - The *UQ-iLab-BatchLabServer-Java* GitHub repository has been downloaded as a ZIP file from:  
`https://github.com/uq1payne/UQ-iLab-BatchLabServer-Java`
  - The *Radioactivity LabServer Database* has been created and configured (see *RadioactivityLabServerDatabase.pdf*).
  - The *Dummy ServiceBroker Database* has been created and configured (see *DummyServiceBrokerDatabase.pdf*).
  - The folder *D:\iLabs\Radioactivity* has been created for the Radioactivity project application files.
  - The folder *D:\iLabs\Dummy* has been created for the Dummy ServiceBroker application files.
- 

## GlassFish Server Administration Console

- Run the *GlassFish Server Administration Console* by entering the following URL in a web browser:  
`http://localhost:4848/`  
If prompted, log in to the Administration Console.
- There are four web applications that need to be deployed to the GlassFish Server.

### Radioactivity LabEquipment

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Radioactivity\_LabEquipment.war*  
Local Folder: *D:\iLabs\Radioactivity\LabEquipment*  
Context Path: */RadioactivityLabEquipment*

### Radioactivity LabServer

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Radioactivity\_LabServer.war*  
Local Folder: *D:\iLabs\Radioactivity\LabServer*  
Context Path: */RadioactivityLabServer*

### Radioactivity LabClient

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Radioactivity\_LabClient.war*  
Local Folder: *D:\iLabs\Radioactivity\LabClient*  
Context Path: */RadioactivityLabClient*

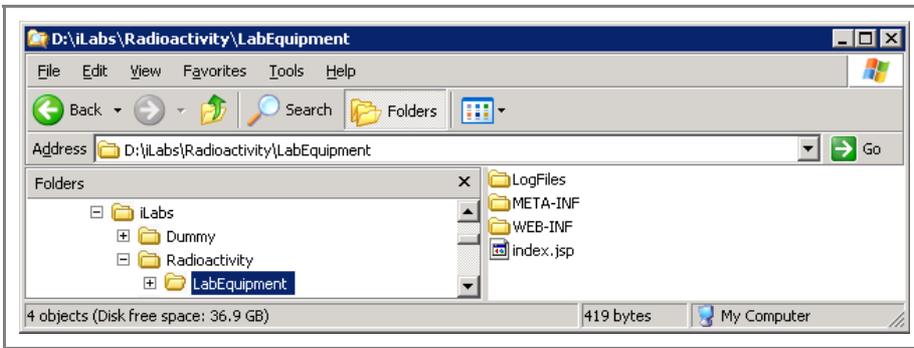
### Dummy ServiceBroker

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Dummy\_ServiceBroker.war*  
Local Folder: *D:\iLabs\Dummy\ServiceBroker*  
Context Path: */DummyServiceBroker*

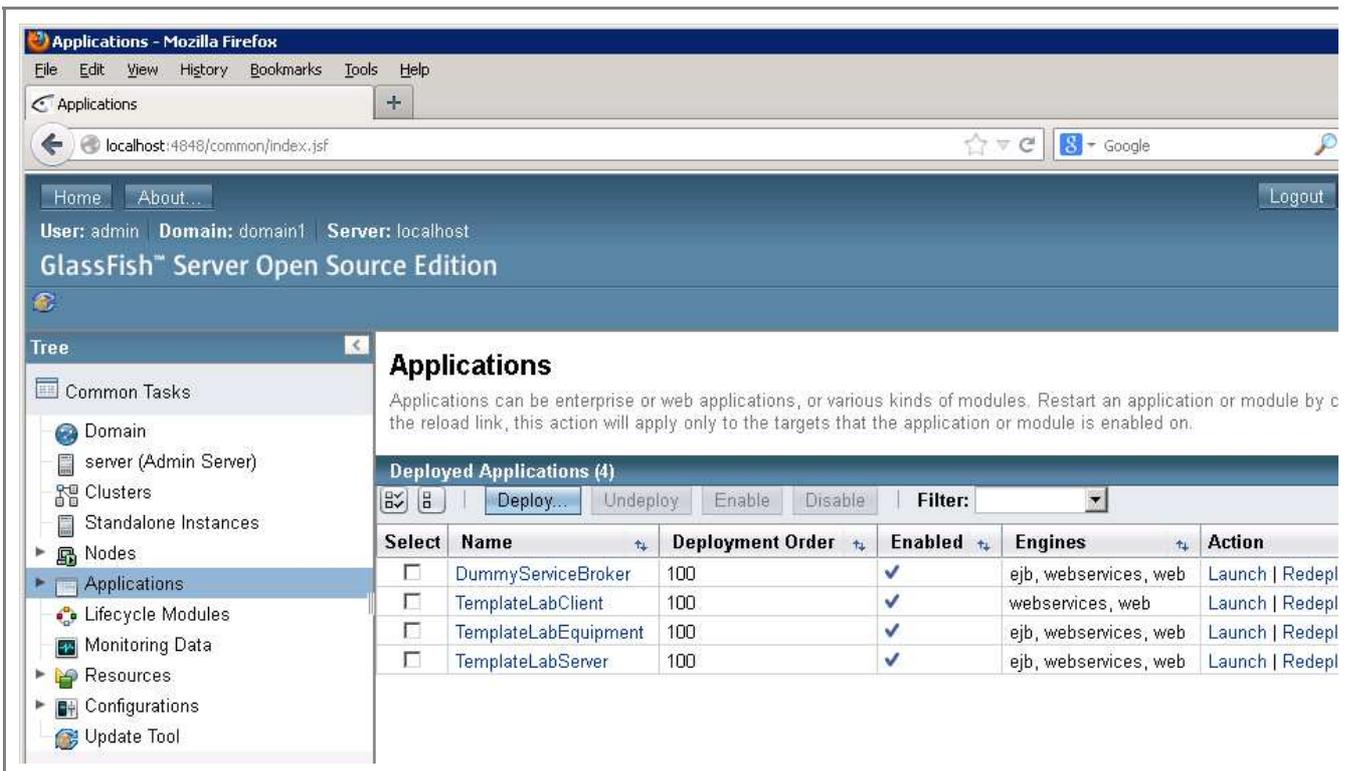
---

## Deploy Radioactivity LabEquipment

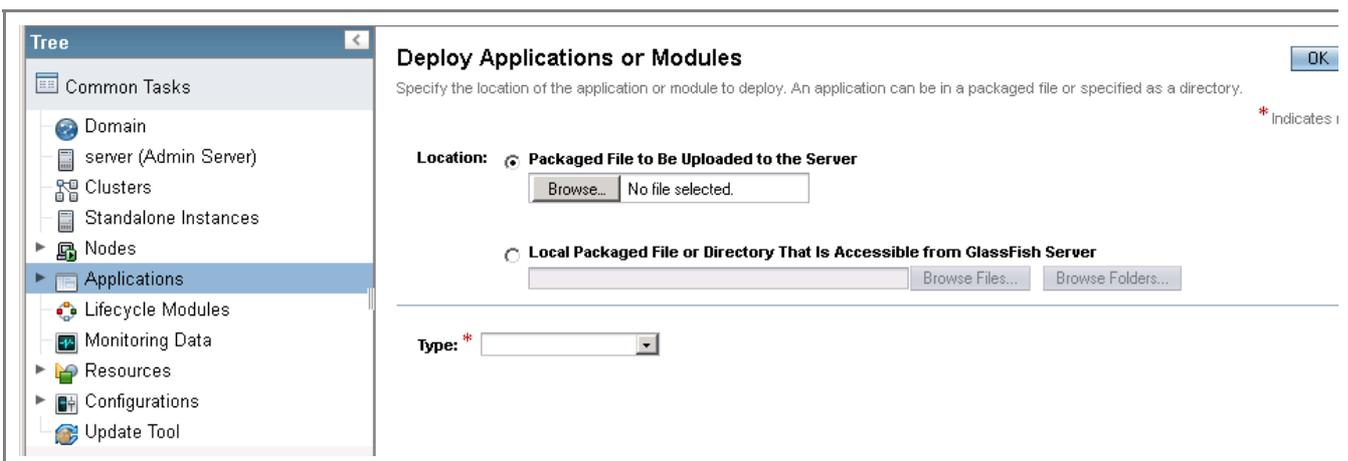
- Create the folder *LabEquipment* in the folder *D:\iLabs\Radioactivity* so that the folder *D:\iLabs\Radioactivity\LabEquipment* exists.  
Extract the web archive file *Builds/Radioactivity\_LabEquipment.war* to the folder *D:\iLabs\Radioactivity\LabEquipment*.



- Go to the *GlassFish Server Administration Console*. In the *Common Tasks* panel, click on *Applications*. If you have already completed the *Template Project Deployment* tutorial then there will be some deployed applications shown.



In the *Applications* panel, click the *Deploy...* button.



In the *Deploy Applications or Modules* panel, select *Local Packaged File or Directory That Is Accessible from GlassFish Server* and enter `D:\iLabs\Radioactivity\LabEquipment` in the field.

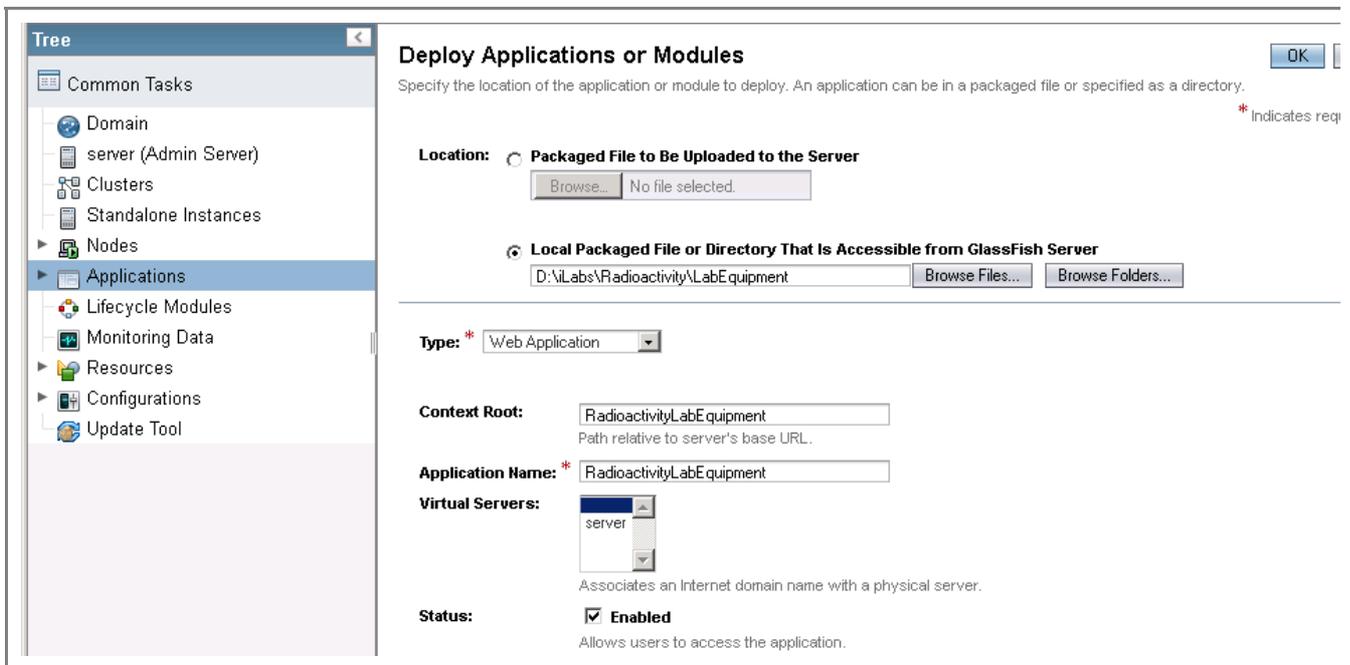
Alternatively, click the *Browse Folders...* button to select the folder.

For *Type*: select *Web Application* from the dropdown list. More fields are then displayed.

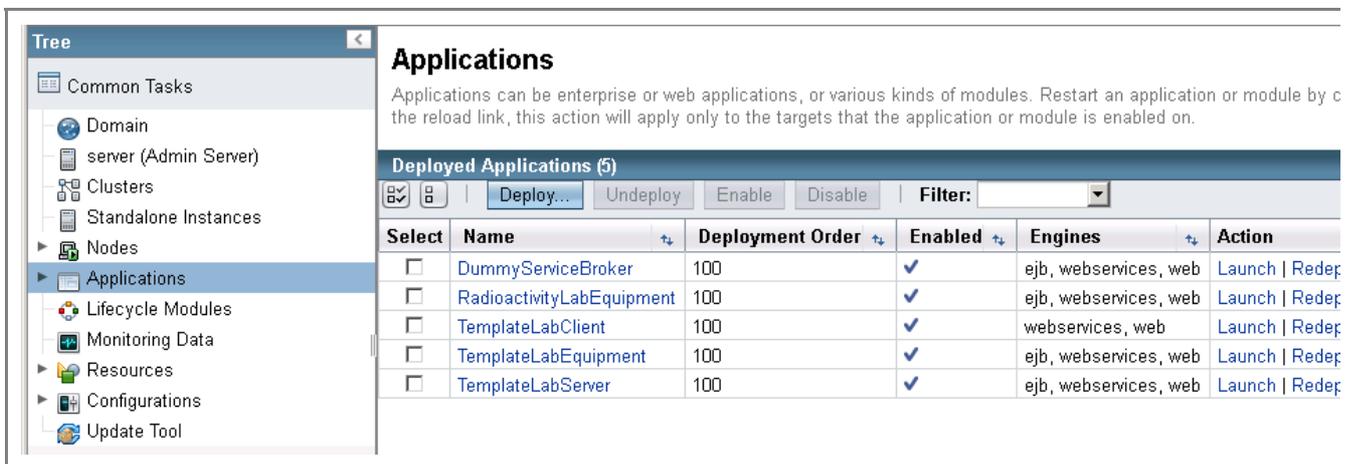
For *Context Root*: enter `RadioactivityLabEquipment` in the field.

Also for *Application Name*: enter `RadioactivityLabEquipment` in the field.

Leave the other fields with their default values.

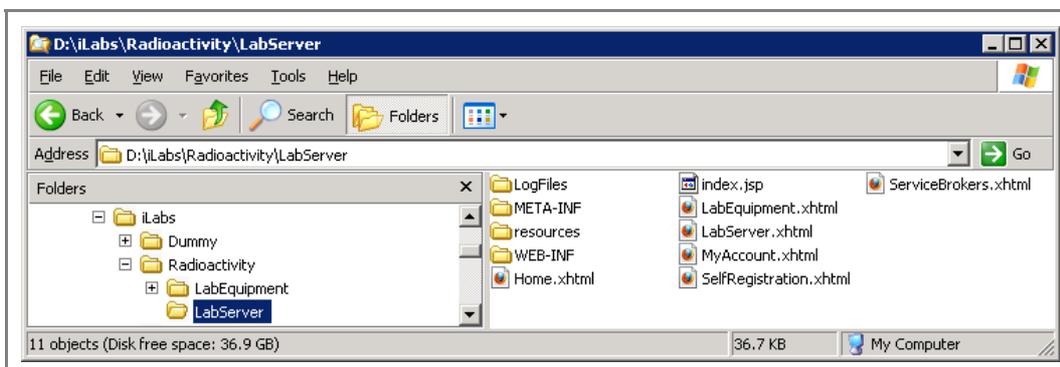


Click the *OK* button to deploy the application.



## Deploy Radioactivity LabServer

- Create the folder *LabServer* in the folder *D:\iLabs\Radioactivity* so that the folder *D:\iLabs\Radioactivity\LabServer* exists. Extract the web archive file *Builds/Radioactivity\_LabServer.war* to the folder *D:\iLabs\Radioactivity\LabServer*.



- Go to the *GlassFish Server Administration Console*. In the *Applications* panel, click the *Deploy...* button.

In the *Deploy Applications or Modules* panel, select *Local Packaged File or Directory That Is Accessible from GlassFish Server* and enter *D:\iLabs\Radioactivity\LabServer* in the field.

Alternatively, click the *Browse Folders...* button to select the folder.

For *Type*: select *Web Application* from the dropdown list. More fields are then displayed.

For *Context Root*: enter *RadioactivityLabServer* in the field.

Also for *Application Name*: enter *RadioactivityLabServer* in the field.

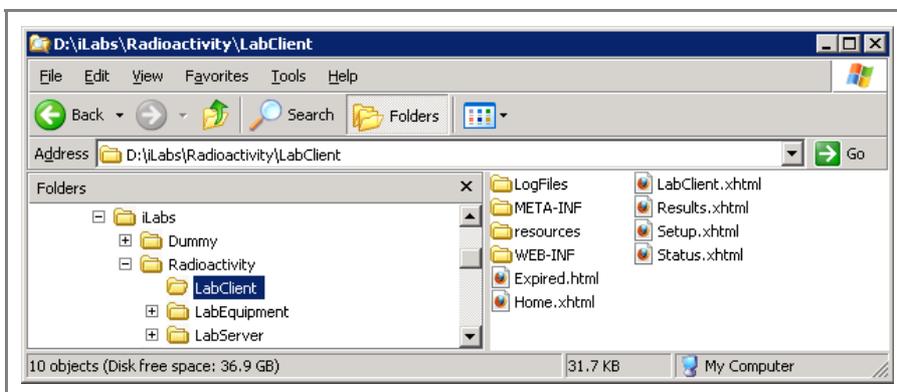
Leave the other fields with their default values.

Click the **OK** button to deploy the application.

Select	Name	Deployment Order	Enabled	Engines	Action
<input type="checkbox"/>	DummyServiceBroker	100	✓	ejb, webservices, web	Launch   Redeploy
<input type="checkbox"/>	RadioactivityLabEquipment	100	✓	ejb, webservices, web	Launch   Redeploy
<input type="checkbox"/>	RadioactivityLabServer	100	✓	ejb, webservices, web	Launch   Redeploy
<input type="checkbox"/>	TemplateLabClient	100	✓	webservices, web	Launch   Redeploy
<input type="checkbox"/>	TemplateLabEquipment	100	✓	ejb, webservices, web	Launch   Redeploy
<input type="checkbox"/>	TemplateLabServer	100	✓	ejb, webservices, web	Launch   Redeploy

## Deploy Radioactivity LabClient

- Create the folder *LabClient* in the folder *D:\iLabs\Radioactivity* so that the folder *D:\iLabs\Radioactivity\LabClient* exists. Extract the web archive file *Builds/Radioactivity\_LabClient.war* to the folder *D:\iLabs\Radioactivity\LabClient*.



- Go to the *GlassFish Server Administration Console*. In the *Applications* panel, click the *Deploy...* button.

In the *Deploy Applications or Modules* panel, select *Local Packaged File or Directory That Is Accessible from GlassFish Server* and enter *D:\iLabs\Radioactivity\LabClient* in the field.

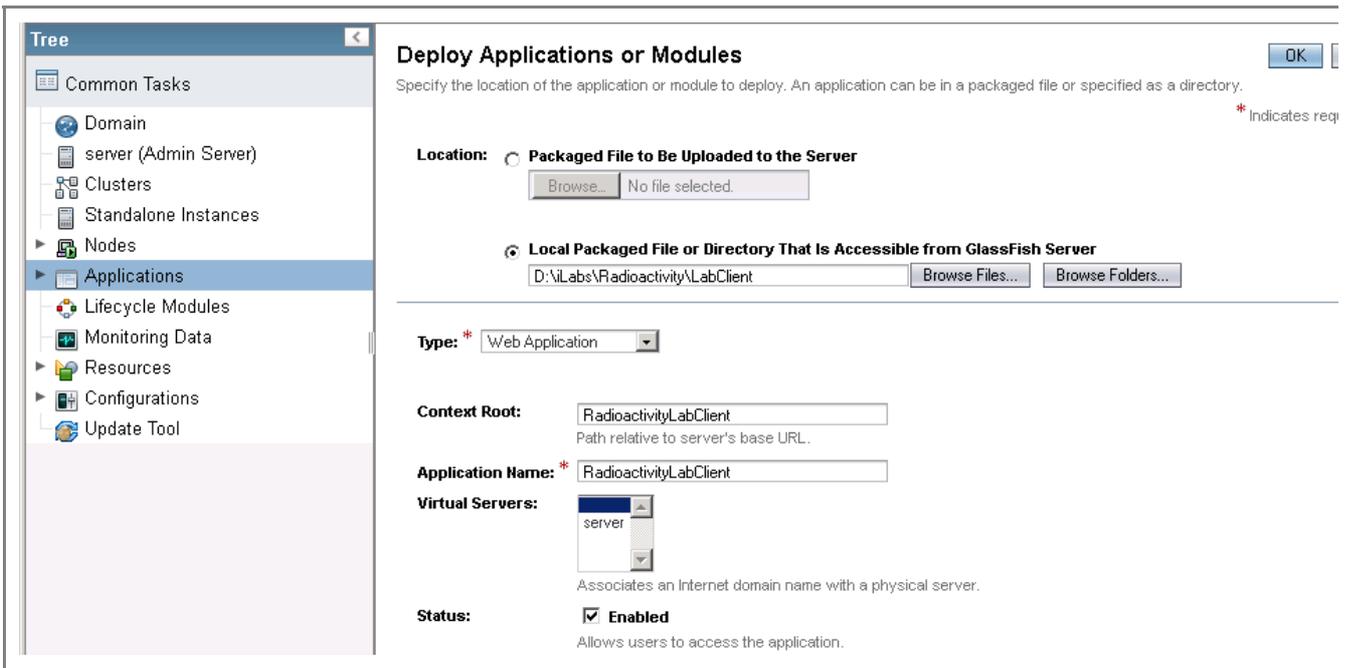
Alternatively, click the *Browse Folders...* button to select the folder.

For *Type*: select *Web Application* from the dropdown list. More fields are then displayed.

For *Context Root*: enter *RadioactivityLabClient* in the field.

Also for *Application Name*: enter `RadioactivityLabClient` in the field.

Leave the other fields with their default values.



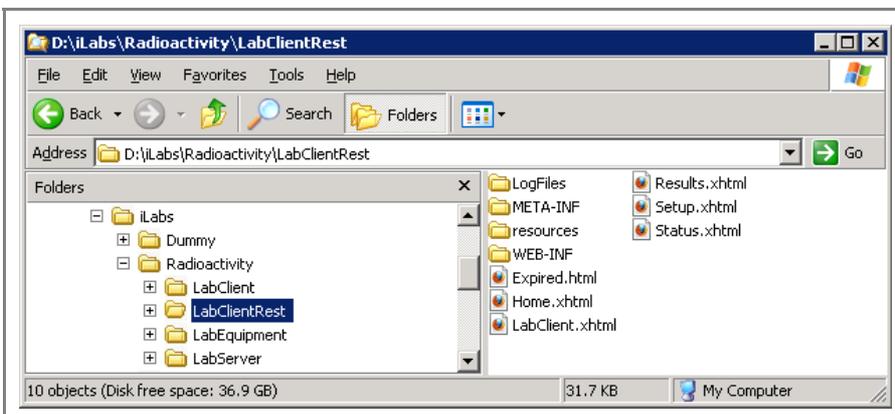
Click the **OK** button to deploy the application.



### Deploy Radioactivity LabClient Rest

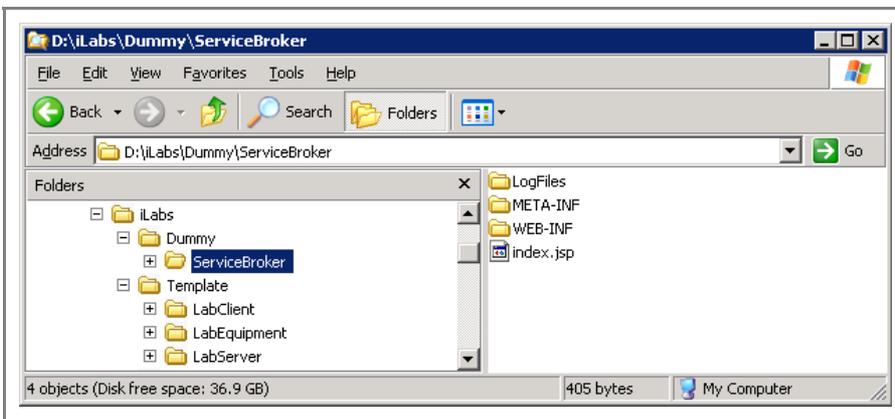
This LabClient uses the *RESTful* services of the Dummy ServiceBroker to communicate.

- Create the folder `LabClientRest` in the folder `D:\iLabs\Radioactivity` so that the folder `D:\iLabs\Radioactivity\LabClientRest` exists. Extract the web archive file `Builds/Radioactivity_LabClient.war` to the folder `D:\iLabs\Radioactivity\LabClientRest`.



- Go to the `D:\iLabs\Radioactivity\LabClientRest\WEB-INF` folder and replace the `ConfigProperties.xml` file with the `ConfigProperties_Rest.xml` file. There are two entries in the file that are different: `ServiceUrl` and `ServiceType`.
- Go to the *GlassFish Server Administration Console*. In the *Applications* panel, click the *Deploy...* button.





- Go to the *GlassFish Server Administration Console*. In the *Applications* panel, click the *Deploy...* button.

In the *Deploy Applications or Modules* panel, select *Local Packaged File or Directory That Is Accessible from GlassFish Server* and enter `D:\iLabs\Dummy\ServiceBroker` in the field.

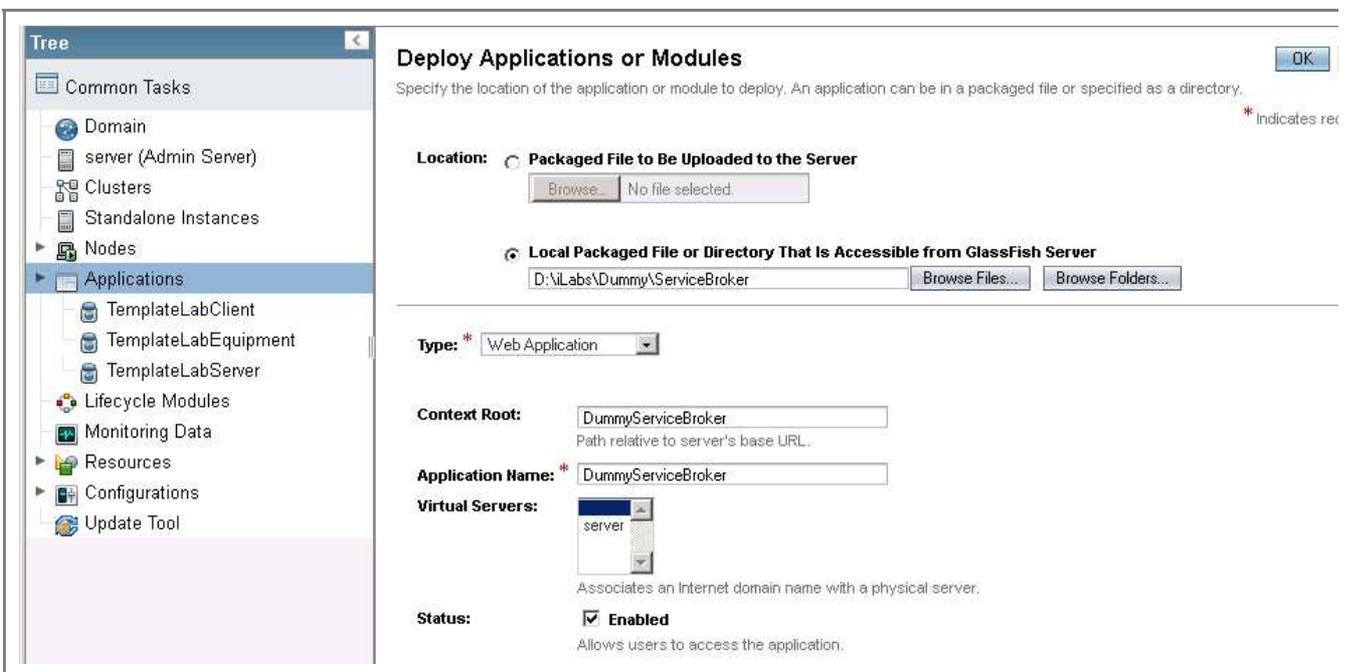
Alternatively, click the *Browse Folders...* button to select the folder.

For *Type*: select *Web Application* from the dropdown list. More fields are then displayed.

For *Context Root*: enter `DummyServiceBroker` in the field.

Also for *Application Name*: enter `DummyServiceBroker` in the field.

Leave the other fields with their default values.



Click the *OK* button to deploy the application.

**Tree**

- Common Tasks
- Domain
  - server (Admin Server)
- Clusters
- Standalone Instances
- Nodes
  - Applications**
    - DummyServiceBroker
    - TemplateLabClient
    - TemplateLabEquipment
    - TemplateLabServer
  - Lifecycle Modules
  - Monitoring Data
  - Resources
  - Configurations
  - Update Tool

## Applications

Applications can be enterprise or web applications, or various kinds of modules. Restart an application or module by clicking the reload link, this action will apply only to the targets that the application or module is enabled on.

**Deployed Applications (4)**

Deploy...
Undeploy
Enable
Disable
Filter:

Select	Name	Deployment Order	Enabled	Engines	Action
<input type="checkbox"/>	DummyServiceBroker	100	✓	ejb, webservices, web	<a href="#">Launch</a>   <a href="#">Redep</a>
<input type="checkbox"/>	TemplateLabClient	100	✓	webservices, web	<a href="#">Launch</a>   <a href="#">Redep</a>
<input type="checkbox"/>	TemplateLabEquipment	100	✓	ejb, webservices, web	<a href="#">Launch</a>   <a href="#">Redep</a>
<input type="checkbox"/>	TemplateLabServer	100	✓	ejb, webservices, web	<a href="#">Launch</a>   <a href="#">Redep</a>

### Launch Radioactivity LabEquipment

- Launch the Radioactivity LabEquipment client by entering the following URL in a web browser:

`http://localhost:8080/RadioactivityLabEquipment/`

The web page simply displays *Radioactivity LabEquipment*. This is sufficient to show that the Radioactivity LabEquipment application has been deployed correctly. At this point in time, the Radioactivity LabEquipment service has not been invoked.

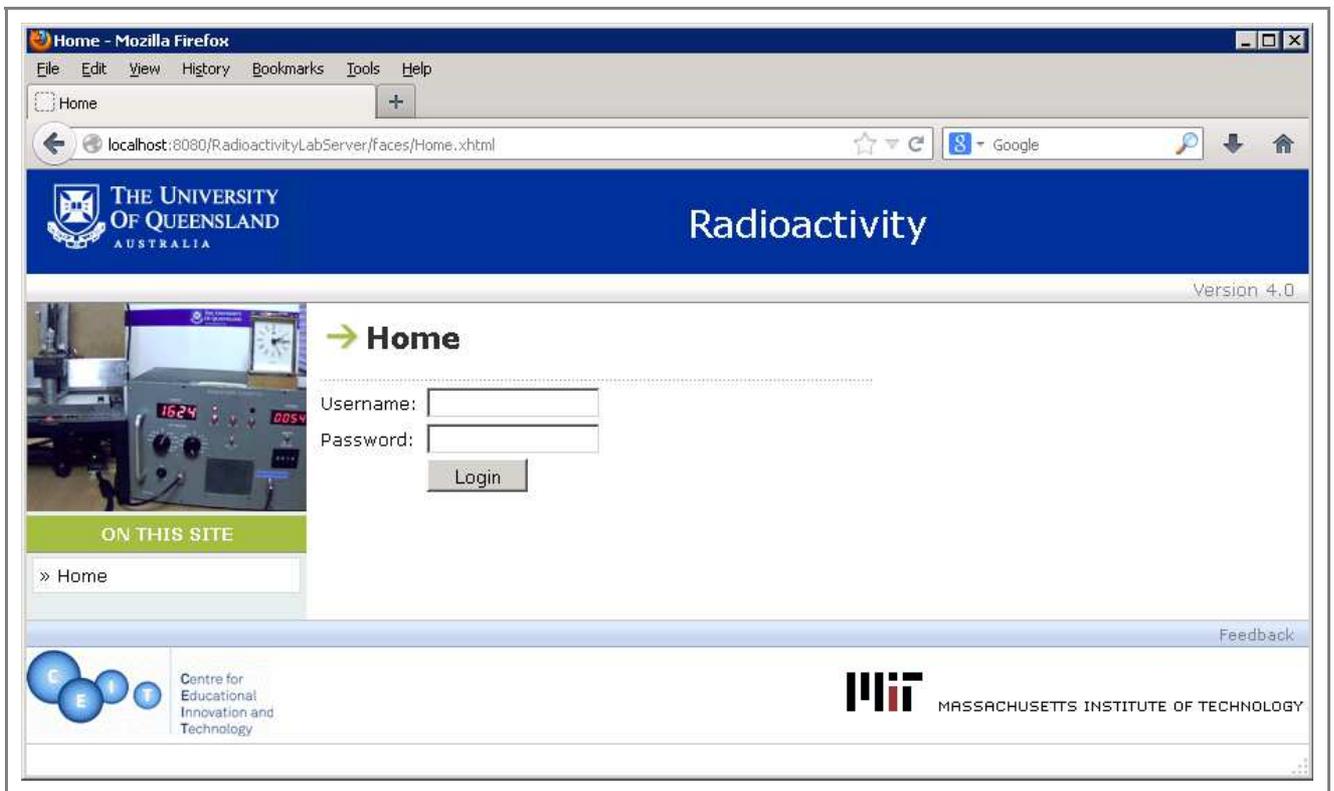


### Launch Radioactivity LabServer

- Launch the Radioactivity LabServer client by entering the following URL in a web browser:

`http://localhost:8080/RadioactivityLabServer/`

The web page displays the *Radioactivity LabServer* login. This is sufficient to show that the Radioactivity LabServer application has been deployed correctly. At this point in time, the Radioactivity LabServer service has not been invoked.



- Log in to the Radioactivity LabServer with the following username and password:

Username: **manager**

Password: **ilab**

The menu provides a number of items to configure the LabServer.

- Self Registration - Configure the LabServer by specifying the name, guid, service URL and email address.
- Lab Equipment - Configure one or more LabEquipment services by specifying the service URL and passkey.
- ServiceBrokers - Specify the details of one or more ServiceBrokers that are permitted to access the LabServer.
- My Account - Specify the LabServer manager's account information.
- Logout - Log out of the LabServer.



- Select the *My Account* menu item.

## → My Account

---

**User Information:**

Username:	manager
First Name:	LabServer
Last Name:	Manager
Contact Email:	manager@your.email.domain
Password:	
Confirm Password:	

- Change the *Contact Email* to your email address or some other appropriate email address.
  - Change the *Password* to something else especially if the LabServer is deployed on a networked server.
  - Click the *Update* button to save the changes.
- Select the *Self Registration* menu item.

## → Self Registration

---

**LabServer Information:**

Name <sup>1</sup> :	Radioactivity Java	
Guid <sup>1</sup> :	FF464E3507564f28A64F156282BB912E	<input type="button" value="Create"/>
Service Uri <sup>1</sup> :	http://localhost:8080/RadioactivityLabServer/LabServerWebService	
Contact Email:	labserver@your.email.domain	
Authenticate:	<input checked="" type="checkbox"/>	

**Optional Information**

Completed Email <sup>2</sup> :	
Failed Email <sup>2</sup> :	

**Notes:**

1. Changing this item requires a LabServer restart.
2. Semicolon-separated list of email addresses.

- Change the *Contact Email* to your email address or some other appropriate email address. This is the LabServer's email address and not the LabServer Manager's email address although they could be the same.
  - If you require the LabServer to send an email when an experiment completes, enter an email address in the *Completed Email* field.
  - If you require the LabServer to send an email when an experiment fails, enter an email address in the *Failed Email* field.
  - Leave the *Name*, *Guid* and *Service Uri* fields with their default values.
  - Click the *Update* button to save the changes.
- Select the *Lab Equipment* menu item. Select LabEquipment Unit 1 from the dropdown list and click the *Select* button.

## → Manage Lab Equipment

### Select LabEquipment Unit:

### LabEquipment Unit Information:

Unit:	<input type="text" value="1"/>
Service Url <sup>1</sup> :	<input type="text" value="http://localhost:8080/RadioactivityLabEquipment/LabEquipmentService"/>
Passkey <sup>1</sup> :	<input type="text" value="fd3cf16cc855484fb06801379f475837"/> <input type="button" value="Create"/>
Enabled:	<input checked="" type="checkbox"/>
<input type="button" value="Update"/> <input type="button" value="Delete"/> <input type="button" value="Test"/> <input type="button" value="New"/>	

#### Notes:

1. Changing this item requires a LabServer restart.

- Leave the fields with their default values.
- Click the *Test* button. This makes a web service call to the LabEquipment to retrieve the LabEquipment status. A message is displayed showing the status of the LabEquipment.
- If the message indicates that the LabEquipment is *Offline*, wait a few seconds for the LabEquipment web service to initialise and start and then click the *Test* button again.
- Open the logfile for the LabEquipment located at *D:\iLabs\Radioactivity\LabEquipment\LogFiles\LabEquipment.log* to view the activity of the LabEquipment service.
- Select the *Self Registration* menu item again.
  - Click the *Test* button. This makes a web service call to the LabServer to retrieve the LabServer status as well as the status of the LabEquipment services that are enabled. It may take a few seconds for the LabServer web service to initialise and start.
  - Open the logfile for the LabServer located at *D:\iLabs\Radioactivity\LabServer\LogFiles\LabServer.log* to view the activity of the LabServer service.
- Select the *ServiceBrokers* menu item. Select the ServiceBroker *localhost* from the dropdown list and click the *Select* button.

## → Manage ServiceBrokers

### Select a ServiceBroker:

### ServiceBroker Information:

ServiceBroker Name:	<input type="text" value="localhost"/>
ServiceBroker Guid:	<input type="text" value="196495303F294B13856D7E48872E51CC"/>
Outgoing Passkey <sup>1</sup> :	<input type="text" value="FD3CF16CC855484FB06801379F475837"/> <input type="button" value="Create"/>
Allow Access:	<input checked="" type="checkbox"/>
<b>Optional Information</b>	
Service Url:	<input type="text" value="http://localhost:8080/DummyServiceBroker/ServiceBrokerService"/>
Incoming Passkey <sup>2</sup> :	<input type="text"/>
<input type="button" value="Update"/> <input type="button" value="Delete"/> <input type="button" value="New"/>	

#### Notes:

1. Passkey sent by the ServiceBroker to the LabServer.
2. Passkey sent by the LabServer to the ServiceBroker.

- Leave the fields with their default values.
- If a *Service Url* is specified then the LabServer will notify the ServiceBroker that an experiment has completed successfully or failed.
- Log out of the Radioactivity LabServer.

## Launch Dummy ServiceBroker

- Launch the Dummy ServiceBroker client by entering the following URL in a web browser:

`http://localhost:8080/DummyServiceBroker/`

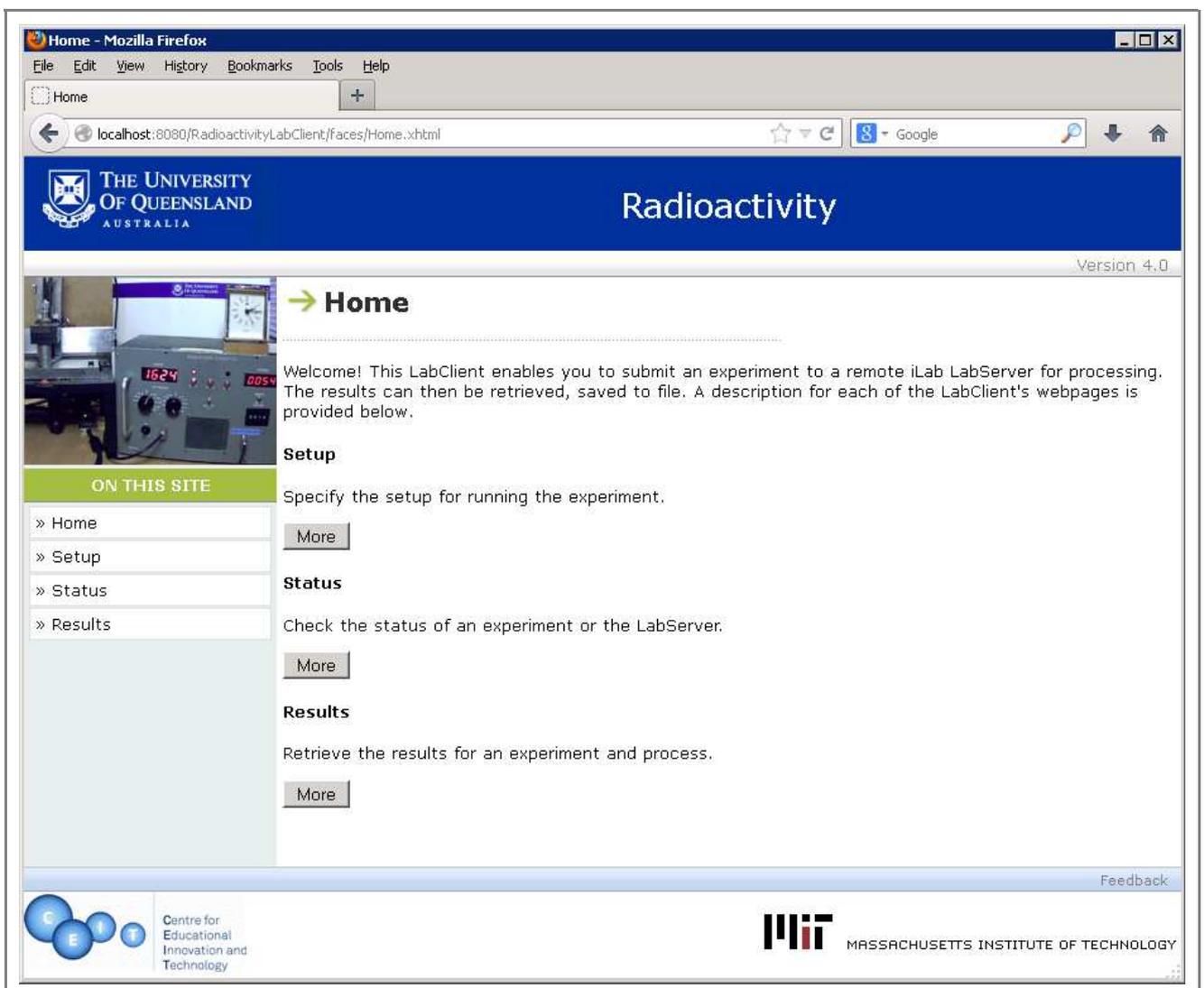
The web page simply displays *Dummy ServiceBroker*. This is sufficient to show that the Dummy ServiceBroker application has been deployed correctly. At this point in time, the Dummy ServiceBroker service has not been invoked.



## Launch Radioactivity LabClient

- Launch the Radioactivity LabClient by entering the following URL in a web browser:

`http://localhost:8080/RadioactivityLabClient/LabClient.do?CouponId=12345&Passkey=qwerty`



The title *Radioactivity* should be displayed at the top of the web page and a version number near the top-right of the page.

- Select the *Status* menu item.

## → Status

---

### LabServer Status

Status: Online

Message: Queue length is 0 and wait time is 0 seconds.  
1: Powered down

### Experiment Status

Experiment Id:

The LabServer status should be Online

Open the logfile for the LabClient located at `D:\iLabs\Radioactivity\LabClient\LogFiles\LabClient.log` to view the activity of the LabClient application.

- Select the *Setup* menu item.

## → Setup

---

### Experiment Setups

Setup:

Measure radioactivity over time at a fixed distance from the source.

Source:

Absorber:

Distance:  (mm)

Duration:  (secs)

Trials:

To run an experiment, select the *Radioactivity over Time* experiment setup from the *Setup* dropdown list. Leave the fields with their default values and then click the *Submit* button. The experiment setup should be successfully submitted and an experiment number presented.

- Select the *Status* menu item.

## → Status

---

### LabServer Status

Status: Online

Message: Queue length is 0 and wait time is 32 seconds.  
1:2: Starting

### Experiment Status

Experiment Id:

The experiment number should automatically appear in the *Experiment Id* field.

Click the *Check* button to check the status of the experiment repeatedly until the experiment completes.

## → Status

---

### LabServer Status

Status: Online

Message: Queue length is 0 and wait time is 0 seconds.  
1: Powered down

### Experiment Status

Experiment Id:

Experiment 2 - Completed

- Select the *Results* menu item.

## → Results

---

### Experiment Results

Experiment Id:

When the experiment completes, the experiment number should automatically appear in the *Experiment Id* field. Click the *Retrieve* button to retrieve the experiment results.

## → Results

---

### Experiment Results

Experiment Id:

Experiment 2 - Completed

### Experiment Information

Timestamp: Mon Jul 29 11:43:46 EST 2013

Experiment Id: 2

Unit Id: 1

### Experiment Setup

Setup Name: Radioactivity over Time

Source: Strontium-90

Absorber: None

Distance (mm): 20

Duration (secs): 5

Trials: 3

### Experiment Results

Data Type: Real

Counts at:

20mm: 305,303,303

Save the results to a comma-separated-value (CSV) file by clicking the *Save* button.

- Select the *Setup* menu item again.
  - Run another experiment but this time, select the *Radioactivity versus Distance* experiment setup from the *Setup* dropdown list. Leave

the fields with their default values and then click the *Submit* button. The experiment setup should be successfully submitted and an experiment number presented.

- Check the status of the experiment repeatedly until the experiment completes.
- Retrieve the experiment results.

## Launch Radioactivity LabClient Rest

This LabClient uses the *REST* services interface of the Dummy ServiceBroker whereas the LabClient in the [previous](#) section *Launch Radioactivity LabClient* uses the SOAP web services interface. The only difference that can be seen is the URL in the web browser.

- Launch the Radioactivity LabClient Rest by entering the following URL in a web browser:

`http://localhost:8080/RadioactivityLabClientRest/LabClient.do?CouponId=12345&Passkey=qwerty`

The screenshot shows a web browser window with the following elements:

- Browser Title:** Home - Mozilla Firefox
- Address Bar:** localhost:8080/RadioactivityLabClientRest/faces/Home.xhtml
- Page Header:** THE UNIVERSITY OF QUEENSLAND AUSTRALIA (left), Radioactivity (center), Version 4.0 (right)
- Main Content:**
  - Home:** Welcome! This LabClient enables you to submit an experiment to a remote iLab LabServer for processing. The results can then be retrieved, saved to file. A description for each of the LabClient's webpages is provided below.
  - Setup:** Specify the setup for running the experiment. [More]
  - Status:** Check the status of an experiment or the LabServer. [More]
  - Results:** Retrieve the results for an experiment and process. [More]
- Left Sidebar:** ON THIS SITE
  - » Home
  - » Setup
  - » Status
  - » Results
- Footer:** Centre for Educational Innovation and Technology (left), MIT MASSACHUSETTS INSTITUTE OF TECHNOLOGY (right)

The title *Radioactivity* should be displayed at the top of the web page and a version number near the top-right of the page.

- Continue as in the [previous](#) section *Launch Radioactivity LabClient*.

**That's it.**