

Template Project Deployment

[TemplateProjectDeployment.htm - uqlpayne 22 Aug 2013]

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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/uqlpayne/UQ-iLab-BatchLabServer-Java`
 - The *Template LabServer Database* has been created and configured (see *TemplateLabServerDatabase.pdf*).
 - The *Dummy ServiceBroker Database* has been created and configured (see *DummyServiceBrokerDatabase.pdf*).
 - The folder *D:\iLabs\Template* has been created for the Template 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.

Template LabEquipment

Packaged File: *UQ-iLab-BatchLabServer-Java/Buils/Template_LabEquipment.war*

Local Folder: *D:\iLabs\Template\LabEquipment*

Context Path: */TemplateLabEquipment*

Template LabServer

Packaged File: *UQ-iLab-BatchLabServer-Java/Buils/Template_LabServer.war*

Local Folder: *D:\iLabs\Template\LabServer*

Context Path: */TemplateLabServer*

Template LabClient

Packaged File: *UQ-iLab-BatchLabServer-Java/Buils/Template_LabClient.war*

Local Folder: *D:\iLabs\Template\LabClient*

Context Path: */TemplateLabClient*

Dummy ServiceBroker

Packaged File: *UQ-iLab-BatchLabServer-Java/Buils/Dummy_ServiceBroker.war*

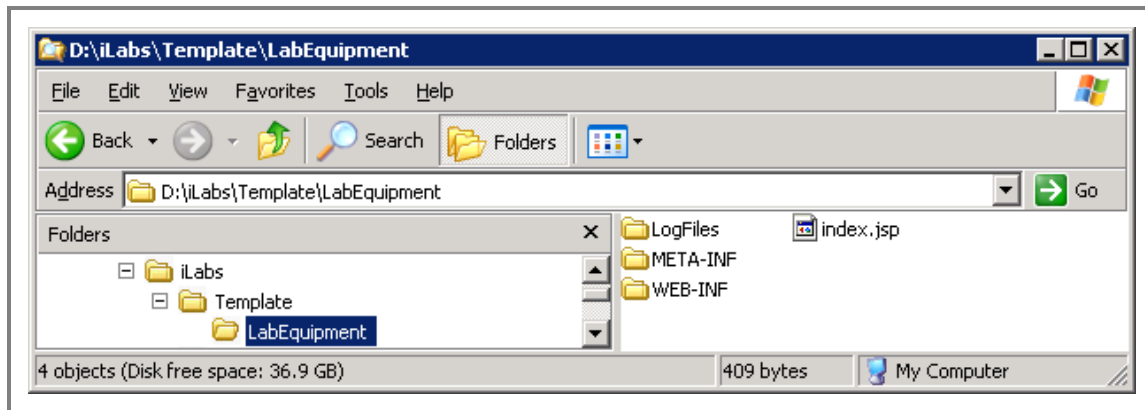
Local Folder: *D:\iLabs\Dummy\ServiceBroker*

Context Path: */DummyServiceBroker*

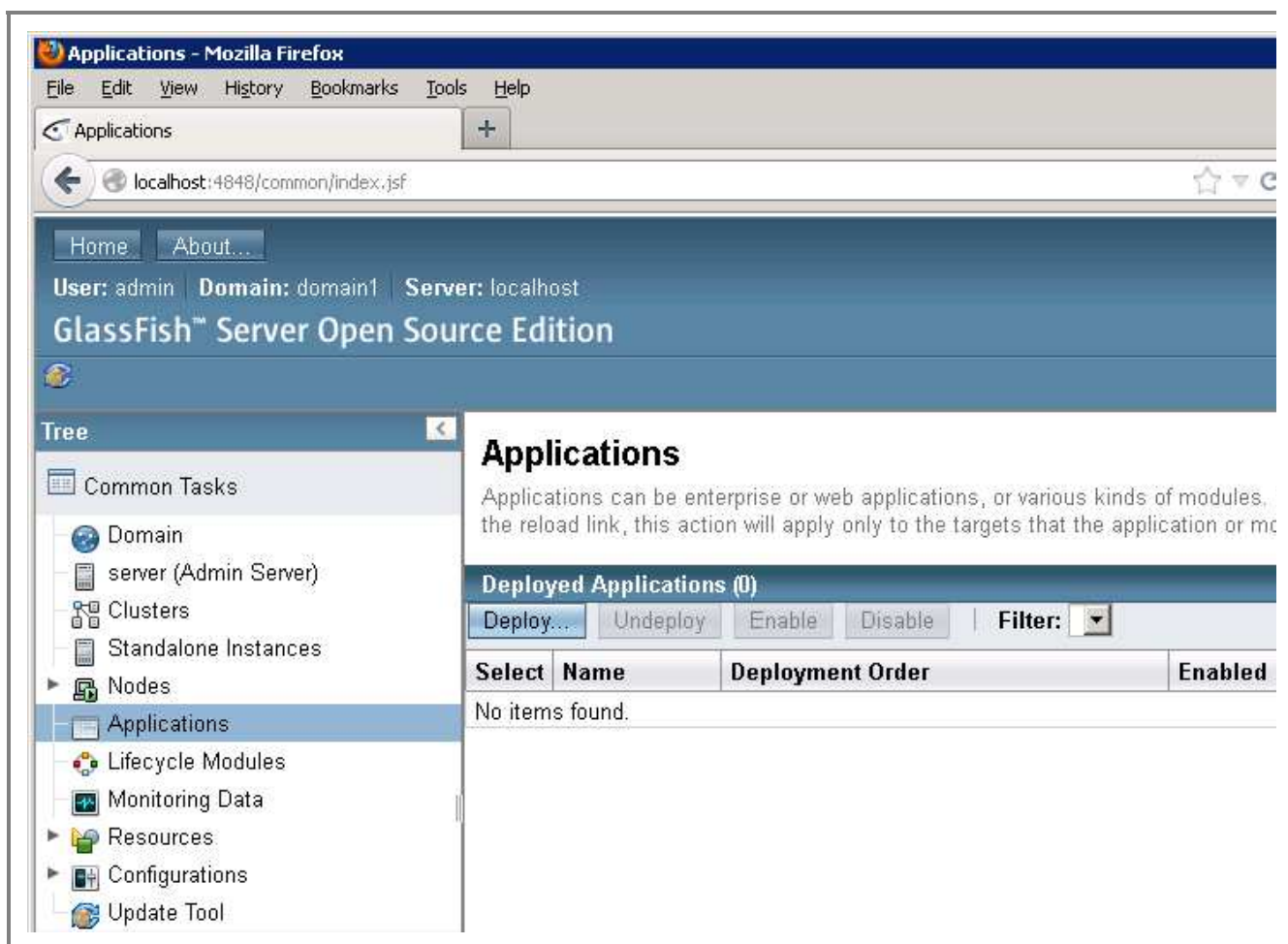
Deploy Template LabEquipment

- Create the folder *LabEquipment* in the folder *D:\iLabs\Template* so that the folder *D:\iLabs\Template\LabEquipment* exists.

Extract the web archive file *Builds/Template_LabEquipment.war* to the folder *D:\iLabs\Template\LabEquipment*.



- Go to the *GlassFish Server Administration Console*. In the *Common Tasks* panel, click on *Applications*.



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

Tree

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

Deploy Applications or Modules

Specify the location of the application or module to deploy. An application can be in a packaged

Location: ☒ **Packaged File to Be Uploaded to the Server**

No file selected.

☐ **Local Packaged File or Directory That Is Accessible from GlassFish**

Type: *

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

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

Leave the other fields with their default values.

Tree

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Deploy Applications or Modules

Specify the location of the application or module to deploy. An application can be in a packaged

Location: ☐ **Packaged File to Be Uploaded to the Server**

No file selected.

☒ **Local Packaged File or Directory That Is Accessible from GlassFish**

Type: *

Context Root:
Path relative to server's base URL.

Application Name: *

Virtual Servers:
Associates an Internet domain name with a physical server.

Status: ☒ **Enabled**
Allows users to access the application.

Click the *OK* button to deploy the application.

Applications

Applications can be enterprise or web applications, or various kinds of modules. the reload link, this action will apply only to the targets that the application or module is deployed to.

Deployed Applications (1)

Select	Name	Deployment Order	Enabled	Engine
<input type="checkbox"/>	TemplateLabEquipment	100	<input checked="" type="checkbox"/>	ejb, we

Deploy Template LabServer

- Create the folder *LabServer* in the folder *D:\iLabs\Template* so that the folder *D:\iLabs\Template\LabServer* exists.

Extract the web archive file *Builds/Template_LabServer.war* to the folder *D:\iLabs\Template\LabServer*.

Windows Explorer window showing the directory *D:\iLabs\Template\LabServer*. The folder contains 11 objects (Disk free space: 36.9 GB). The objects are:

- LogFiles
- META-INF
- resources
- WEB-INF
- Home.xhtml
- index.jsp
- LabEquipment.xhtml
- LabServer.xhtml
- MyAccount.xhtml
- SelfRegistration.xhtml
- ServiceBrokers.xhtml

- 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\Template\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 *TemplateLabServer* in the field.

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

Leave the other fields with their default values.

Tree

- Common Tasks
- Domain
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- Nodes
- Applications**
 - TemplateLabEquipment
 - Lifecycle Modules
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 - Configurations
 - Update Tool

Deploy Applications or Modules

Specify the location of the application or module to deploy. An application can be in a packaged

Location: ☐ **Packaged File to Be Uploaded to the Server**
 No file selected.

☒ **Local Packaged File or Directory That Is Accessible from GlassFish**
D:\iLabs\Template\LabServer

Type: * Web Application

Context Root: TemplateLabServer
Path relative to server's base URL.

Application Name: * TemplateLabServer

Virtual Servers:

server

Associates an Internet domain name with a physical server.

Status: ☒ **Enabled**
Allows users to access the application.

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

Tree

- Common Tasks
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Applications

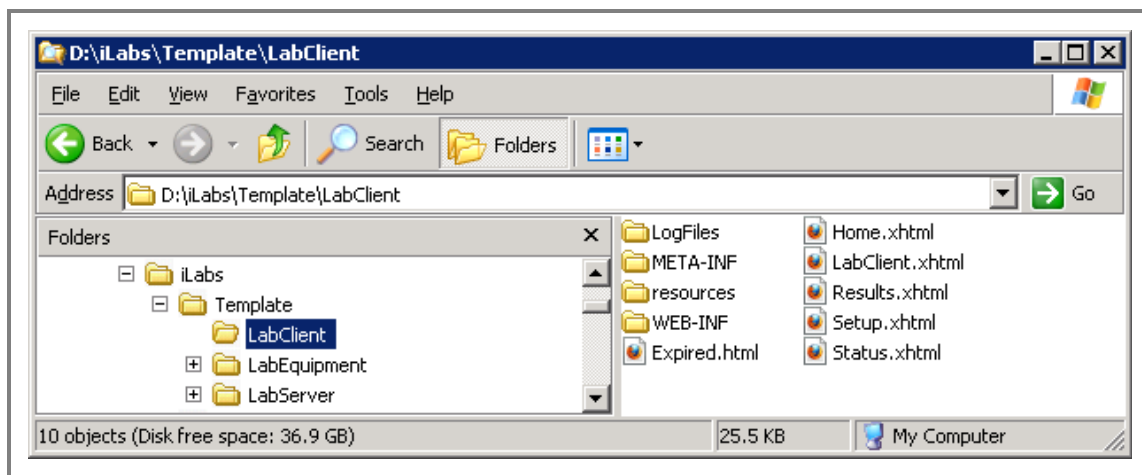
Applications can be enterprise or web applications, or various kinds of modules. the reload link, this action will apply only to the targets that the application or mc

Deployed Applications (2)					
<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="button" value="Deploy..."/> <input type="button" value="Undeploy"/> <input type="button" value="Enable"/> <input type="button" value="Disable"/> Filter:					
Select	Name	Deployment Order	Enabled		
<input type="checkbox"/>	TemplateLabEquipment	100	✓	ejb	
<input type="checkbox"/>	TemplateLabServer	100	✓	ejb	

Deploy Template LabClient

- Create the folder *LabClient* in the folder *D:\iLabs\Template* so that the folder *D:\iLabs\Template\LabClient* exists.

Extract the web archive file *Builds\Template_LabClient.war* to the folder *D:\iLabs\Template\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\Template\LabClient` in the field.

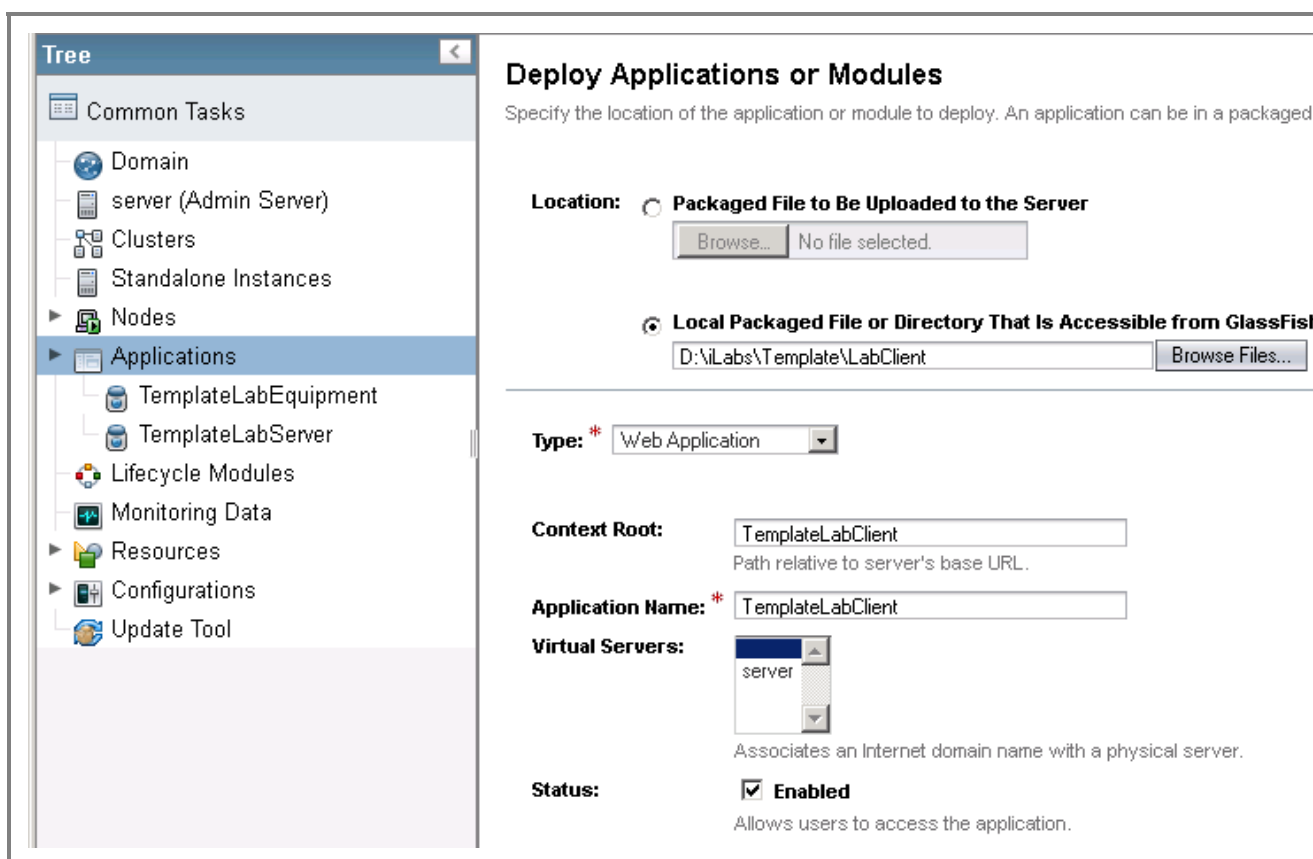
Alternatively, click the *Browse Folders...* button to select the folder.

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

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

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

Leave the other fields with their default values.



Click the *OK* button to deploy the application.

Applications

Applications can be enterprise or web applications, or various kinds of modules. the reload link, this action will apply only to the targets that the application or module is deployed to.

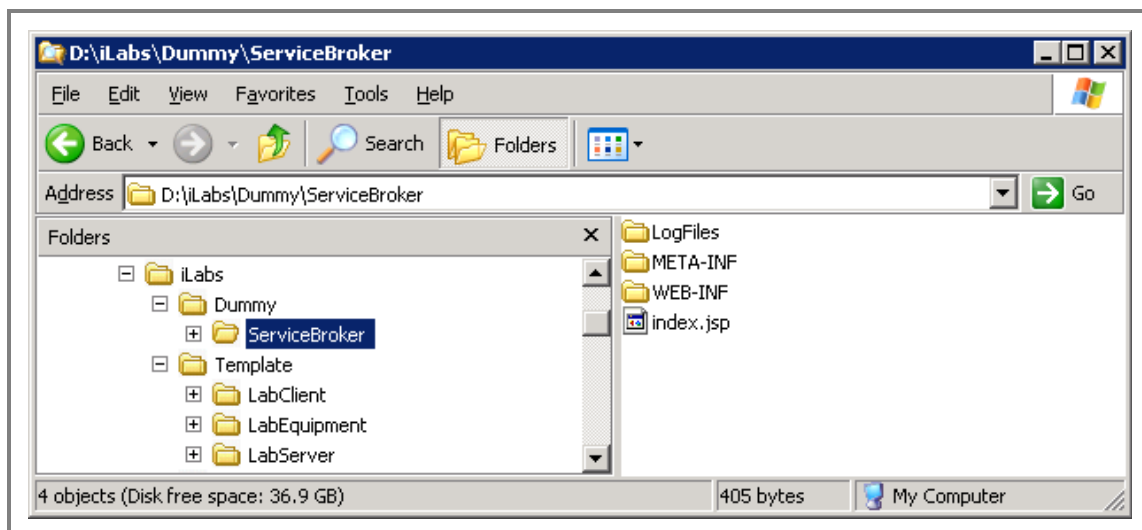
Deployed Applications (3)

Select	Name	Deployment Order	Enabled	Environment
<input type="checkbox"/>	TemplateLabClient	100	✓	web
<input type="checkbox"/>	TemplateLabEquipment	100	✓	ejb
<input type="checkbox"/>	TemplateLabServer	100	✓	ejb

Deploy Dummy ServiceBroker

- Create the folder *ServiceBroker* in the folder *D:\iLabs\Dummy* so that the folder *D:\iLabs\Dummy\ServiceBroker* exists.

Extract the web archive file *Builds/Dummy_ServiceBroker.war* to the folder *D:\iLabs\Dummy\ServiceBroker*.



- 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.

Tree

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- Domain
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- Nodes
- Applications**
 - TemplateLabClient
 - TemplateLabEquipment
 - TemplateLabServer
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- Monitoring Data
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- Configurations
- Update Tool

Deploy Applications or Modules

Specify the location of the application or module to deploy. An application can be in a packaged

Location: ☐ **Packaged File to Be Uploaded to the Server**
 No file selected.

☒ **Local Packaged File or Directory That Is Accessible from GlassFish**

Type: *

Context Root:
Path relative to server's base URL.

Application Name: *

Virtual Servers:
Associates an Internet domain name with a physical server.

Status: ☒ **Enabled**
Allows users to access the application.

Click the OK button to deploy the application.

Tree

- Common Tasks
- Domain
 - server (Admin Server)
- Clusters
- Standalone Instances
- Nodes
- Applications**
 - DummyServiceBroker
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 - TemplateLabEquipment
 - TemplateLabServer
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Applications

Applications can be enterprise or web applications, or various kinds of modules. the reload link, this action will apply only to the targets that the application or mc

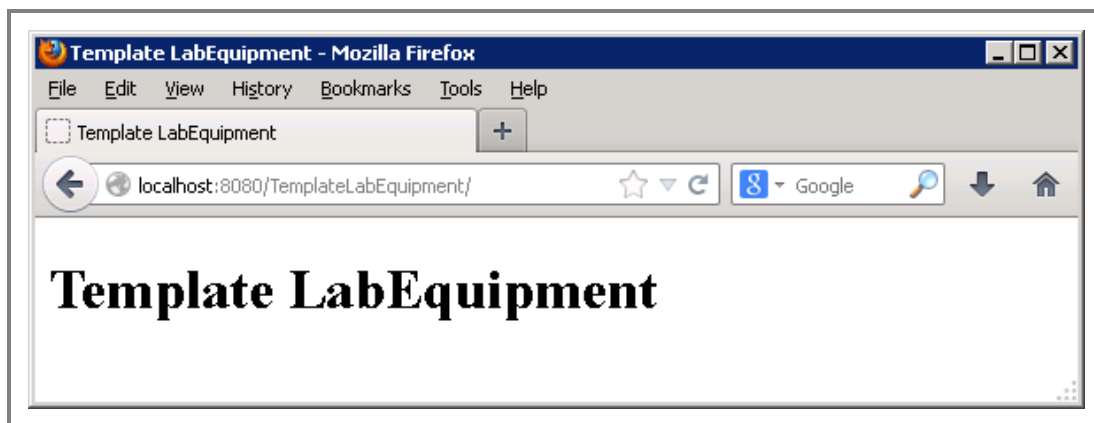
Deployed Applications (4)						
		Deploy...	Undeploy	Enable	Disable	Filter:
Select	Name	Deployment Order	Enabled			
<input type="checkbox"/>	DummyServiceBroker	100	✓			ejb
<input type="checkbox"/>	TemplateLabClient	100	✓			wel
<input type="checkbox"/>	TemplateLabEquipment	100	✓			ejb
<input type="checkbox"/>	TemplateLabServer	100	✓			ejb

Launch Template LabEquipment

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

<http://localhost:8080/TemplateLabEquipment/>

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

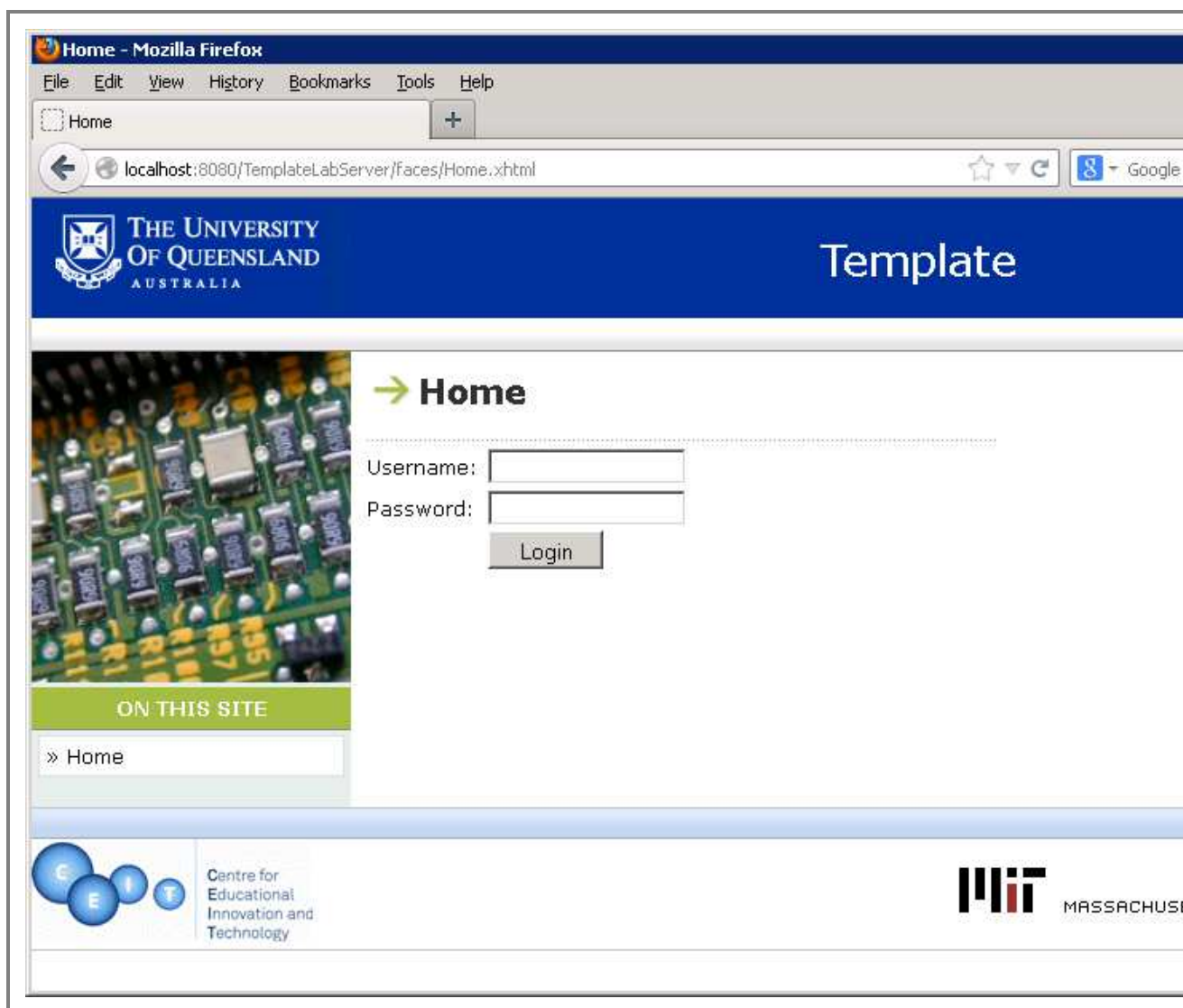


Launch Template LabServer

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

`http://localhost:8080/TemplateLabServer/`

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



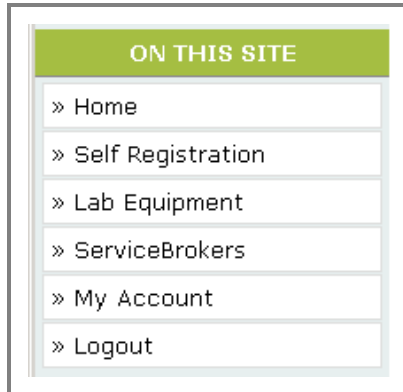
- Log in to the Template LabServer with the following username and password:

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.

A screenshot of the "My Account" page. At the top, there is a green arrow pointing right followed by the text "My Account". Below this is a horizontal dotted line. Under the heading "User Information:", there is a form with several input fields: "Username:" with the value "manager", "First Name:" with "LabServer", "Last Name:" with "Manager", "Contact Email:" with "manager@your.email.domain", "Password:", and "Confirm Password:". At the bottom of the form is a button labeled "Update".

- 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 ¹ :	Template Java	
Guid ¹ :	2CD01113C51C4ca997B059531CD9469D	Create
Service Url ¹ :	http://localhost:8080/TemplateLabServer/LabServer/WebService	
Contact Email:	labserver@your.email.domain	
Authenticate:	<input checked="" type="checkbox"/>	
Optional Information		
Completed Email ² :		
Failed Email ² :		
	Update	Test
	New	

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 Url* 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 ¹ :	<input type="text" value="http://localhost:8080/TemplateLabEquipment/LabEquipmentService"/>
Passkey ¹ :	<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\Template\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\Template\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 ¹ :	<input type="text" value="FD3CF16CC855484FB06801379F475837"/>	<input type="button" value="Create"/>	
Allow Access:	<input checked="" type="checkbox"/>		
Optional Information			
Service Url:	<input type="text" value="http://localhost:8080/DummyServiceBroker/ServiceBrokerService"/>		
Incoming Passkey ² :	<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.

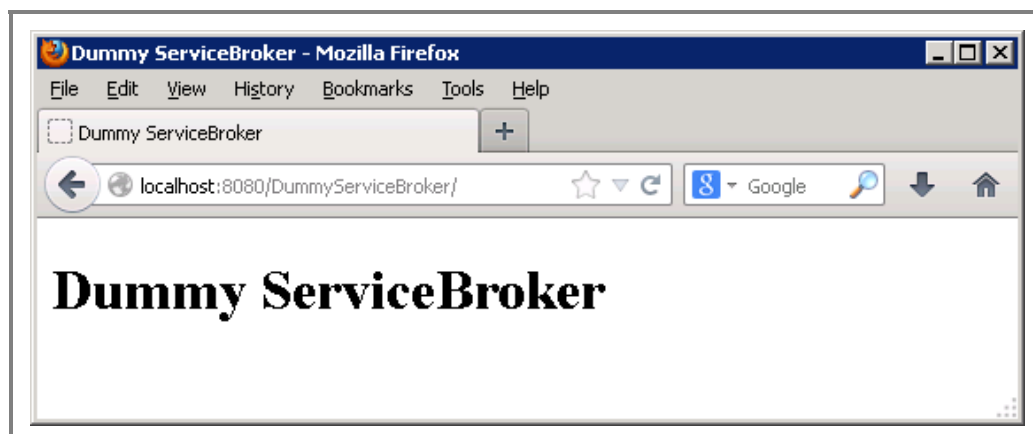
- Leave the fields with their default values.
- If a *Service Url* is specified then the LabServer will notify the ServiceBroker that an experiment has completed successfully or failed.
- Log out of the Template LabServer.

Launch Dummy ServiceBroker

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

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

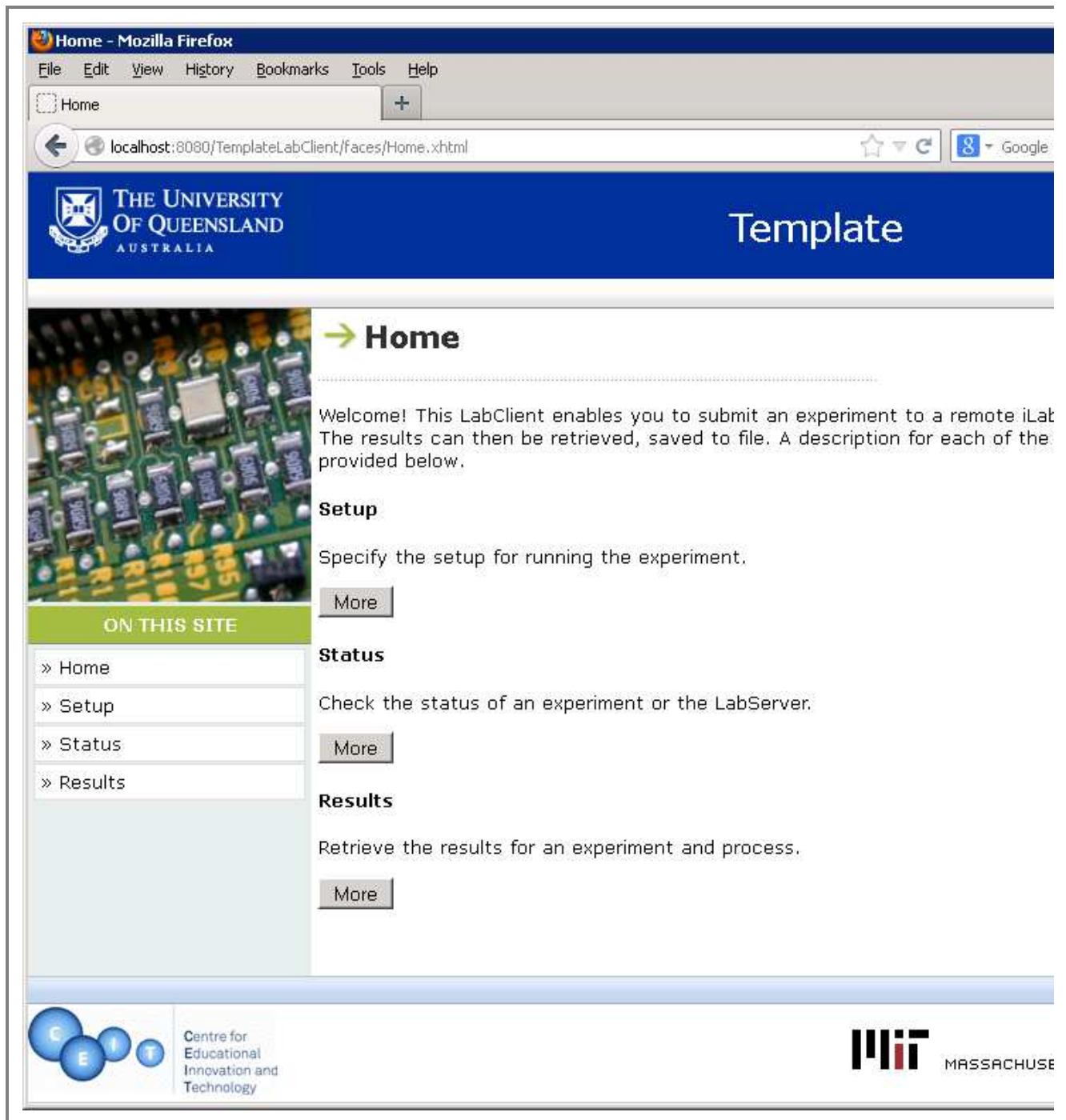
The web page simply displays *Dummy ServiceBroker*. This is sufficient to show that the Dummy ServiceBroker application has been deployed correctly. At this point in time, the Dummy ServiceBroker service has not been invoked.



Launch Template LabClient

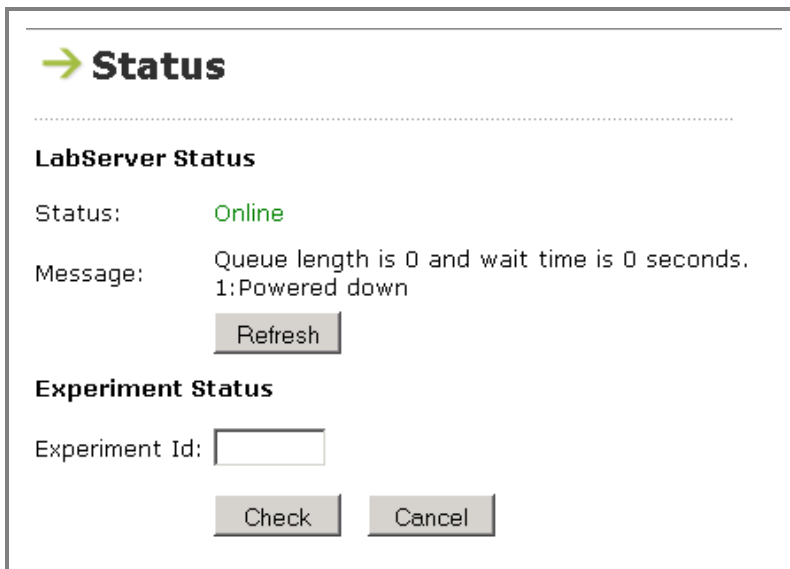
- Launch the Template LabClient by entering the following URL in a web browser:

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



The title *Template* 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.



The screenshot shows a window titled "Status" with a green arrow icon. It contains two sections: "LabServer Status" and "Experiment Status". In the "LabServer Status" section, the status is "Online" in green text, and the message is "Queue length is 0 and wait time is 0 seconds. 1: Powered down". There is a "Refresh" button below the message. In the "Experiment Status" section, there is an "Experiment Id:" label followed by a text input field. Below the input field are "Check" and "Cancel" buttons.

→ Status

LabServer Status

Status: **Online**

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

Refresh

Experiment Status

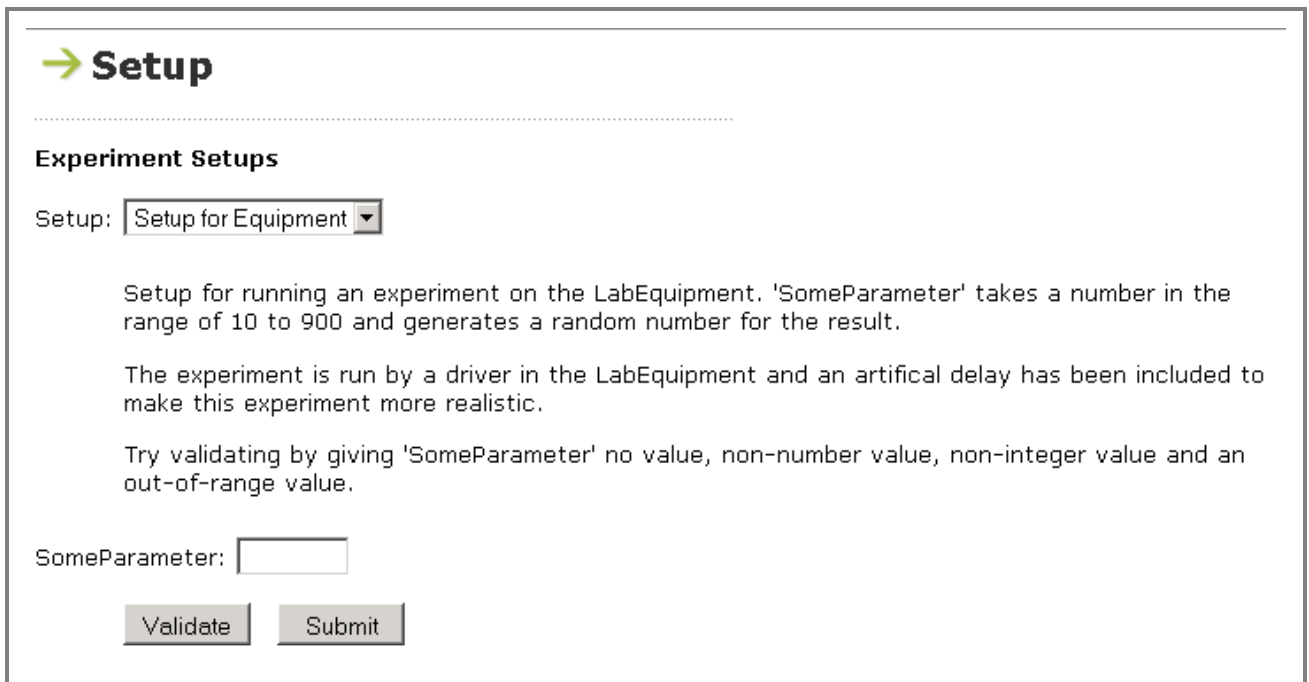
Experiment Id:

Check Cancel

The LabServer status should be *Online*

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

- Select the *Setup* menu item.



The screenshot shows a window titled "Setup" with a green arrow icon. It contains an "Experiment Setups" section. In this section, there is a "Setup:" label followed by a dropdown menu currently showing "Setup for Equipment". Below this, there is explanatory text about the setup, including a description of "SomeParameter" and instructions on how to validate and submit the setup. At the bottom, there is a "SomeParameter:" label followed by a text input field, and "Validate" and "Submit" buttons.

→ Setup

Experiment Setups

Setup: Setup for Equipment ▼

Setup for running an experiment on the LabEquipment. 'SomeParameter' takes a number in the range of 10 to 900 and generates a random number for the result.

The experiment is run by a driver in the LabEquipment and an artificial delay has been included to make this experiment more realistic.

Try validating by giving 'SomeParameter' no value, non-number value, non-integer value and an out-of-range value.

SomeParameter:

Validate Submit

To run an experiment, select the *Setup for Equipment* experiment setup from the *Setup* dropdown list. Enter a value for *SomeParameter* 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 12 seconds.
1:1: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.

→ Status

LabServer Status

Status: **Online**

Message: Queue length is 0 and wait time is 12 seconds.
1:1:Starting

Experiment Status

Experiment Id:

Time remaining is 12 seconds

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 1 - 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 1 - Completed

Experiment Information

Timestamp: Fri Jul 26 14:33:51 EST 2013

Experiment Id: 1

Unit Id: 1

Experiment Setup

Setup Name: Setup for Equipment

SomeParameter: 500

Experiment Results

SomeResult: 255

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 *Setup for Simulation* experiment setup from the *Setup* dropdown list. Enter a value for *SomeParameter* 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.

That's it.