

# Template Project Deployment

[TemplateProjectDeployment.htm - uqlpayne 26 Jul 2013]

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The following procedure requires that:

- 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.
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## 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/Builds/Template\_LabEquipment.war*

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

Context Path: */TemplateLabEquipment*

Template LabServer

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Template\_LabServer.war*

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

Context Path: */TemplateLabServer*

Template LabClient

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Template\_LabClient.war*

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

Context Path: */TemplateLabClient*

Dummy ServiceBroker

Packaged File: *UQ-iLab-BatchLabServer-Java/Builds/Dummy\_ServiceBroker.war*

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

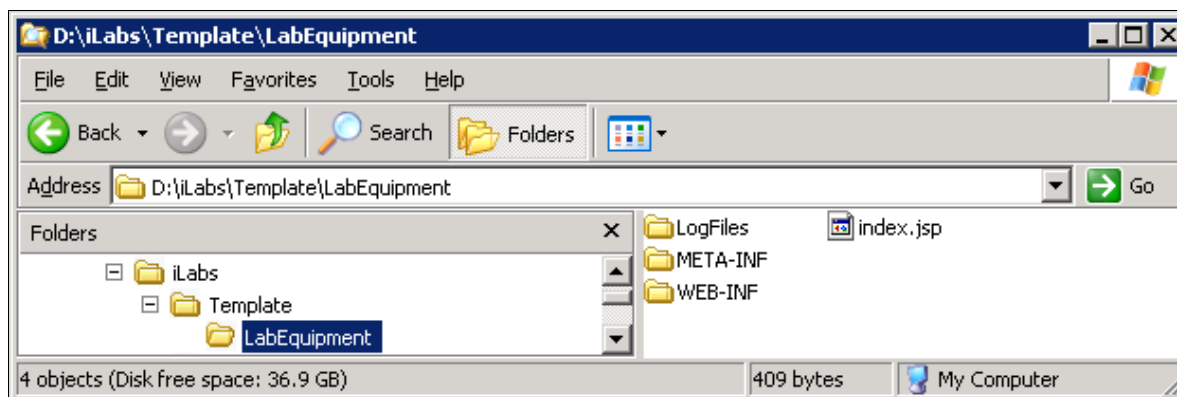
Context Path: */DummyServiceBroker*

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## 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*.

Applications - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Applications

localhost:4848/common/index.jsf

Home About... Logout Help

User: admin Domain: domain1 Server: localhost

# GlassFish™ Server Open Source Edition

## Applications

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

**Deployed Applications (0)**

Deploy... Undeploy Enable Disable Filter: ▼

Select	Name	Deployment Order	Enabled	Engines	Action
No items found.					

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** OK Cancel

Specify the location of the application or module to deploy. An application can be in a packaged file or specified as a directory. \* Indicates required field

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

Browse... No file selected.

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

Browse Files... Browse Folders...

**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**

- 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 file or specified as a directory. \* Indicates required field

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

No file selected.

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

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**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**
    - TemplateLabEquipment
    - 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 on the reload link, this action will apply only to the targets that the application or module is enabled on.

**Deployed Applications (1)**

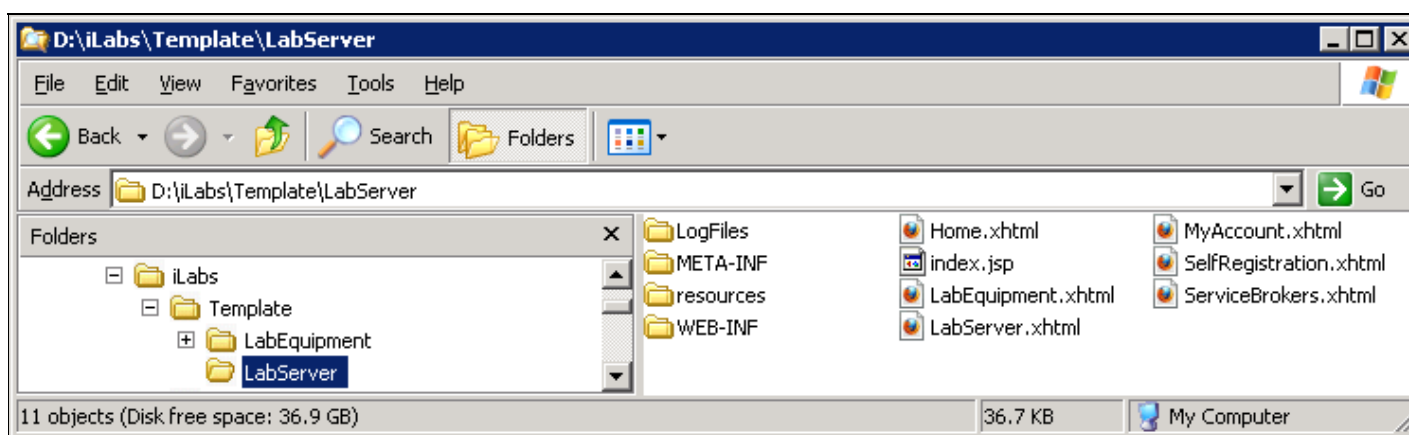
☒ ☐ | [Deploy...](#) [Undeploy](#) [Enable](#) [Disable](#) | Filter:

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

## 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*.



- 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
  - server (Admin Server)
- Clusters
- Standalone Instances
- Nodes
- Applications
  - TemplateLabEquipment
  - 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 file or specified as a directory.

\* Indicates required field

**Location:** ☐ Packaged File to Be Uploaded to the Server  
☐ Local Packaged File or Directory That Is Accessible from GlassFish Server

No file selected.

**Type:** \* Web Application

**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
    - 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 on the reload link, this action will apply only to the targets that the application or module is enabled on.

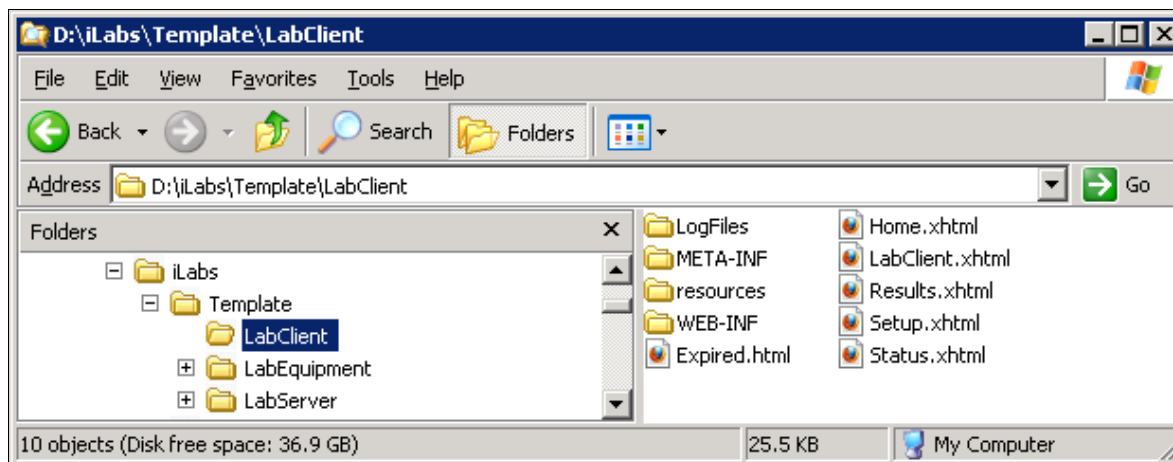
**Deployed Applications (2)**
☒ ☐ | [Deploy...](#) [Undeploy](#) [Enable](#) [Disable](#) | Filter:

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

## 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.

The screenshot shows the 'Deploy Applications or Modules' dialog box in the GlassFish Server Administration Console. On the left is a 'Tree' panel with a navigation menu containing 'Common Tasks', 'Domain', 'server (Admin Server)', 'Clusters', 'Standalone Instances', 'Nodes', 'Applications' (selected), 'TemplateLabEquipment', 'TemplateLabServer', 'Lifecycle Modules', 'Monitoring Data', 'Resources', 'Configurations', and 'Update Tool'. The main area is titled 'Deploy Applications or Modules' and includes a subtitle: 'Specify the location of the application or module to deploy. An application can be in a packaged file or specified as a directory.' There are 'OK' and 'Cancel' buttons in the top right. A legend indicates that an asterisk (\*) denotes a required field. The 'Location' section has two radio buttons: 'Packaged File to Be Uploaded to the Server' (unselected) and 'Local Packaged File or Directory That Is Accessible from GlassFish Server' (selected). The selected option has a text field containing 'D:\iLabs\Template\LabClient' and two buttons: 'Browse Files...' and 'Browse Folders...'. The 'Type' field is a dropdown menu set to 'Web Application'. The 'Context Root' field contains 'TemplateLabClient' with a note 'Path relative to server's base URL.' The 'Application Name' field, marked with an asterisk, also contains 'TemplateLabClient'. The 'Virtual Servers' section shows a list box with 'server' selected and a note 'Associates an Internet domain name with a physical server.' The 'Status' section has a checked checkbox for 'Enabled' with a note '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**
  - 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 on the reload link, this action will apply only to the targets that the application or module is enabled on.

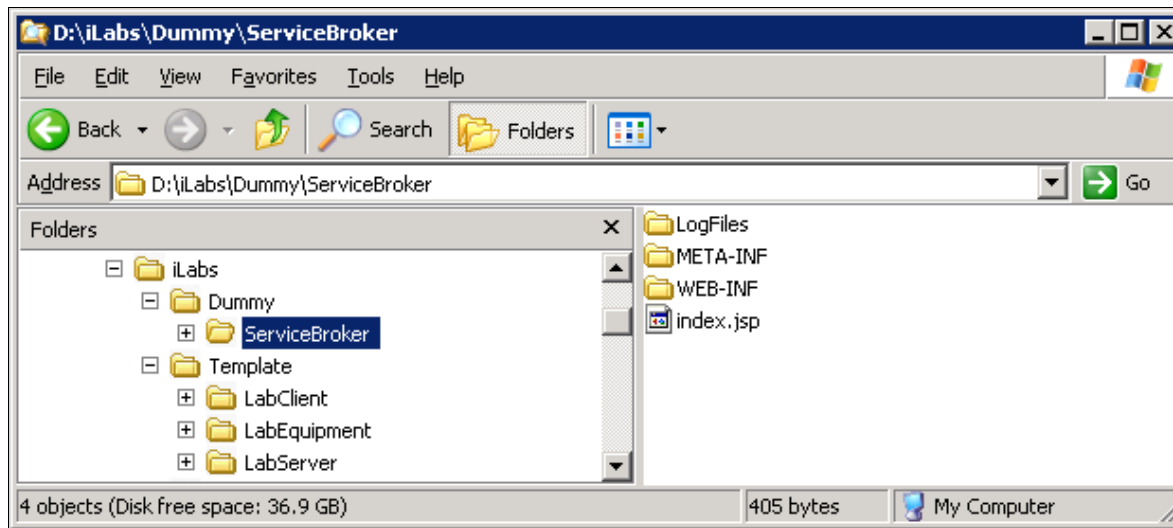
**Deployed Applications (3)**
☒ ☐ | [Deploy...](#) [Undeploy](#) [Enable](#) [Disable](#) | Filter:

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

## 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

Common Tasks

Domain

server (Admin Server)

Clusters

Standalone Instances

Nodes

Applications

TemplateLabClient

TemplateLabEquipment

TemplateLabServer

Lifecycle Modules

Monitoring Data

Resources

Configurations

Update Tool

Deploy Applications or Modules

OK Cancel

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

\* Indicates required field

Location:

Packaged File to Be Uploaded to the Server

Browse... No file selected.

Local Packaged File or Directory That Is Accessible from GlassFish Server

D:\iLabs\Dummy\ServiceBroker

Browse Files...

Browse Folders...

Type: \*

Web Application

Context Root:

DummyServiceBroker

Path relative to server's base URL.

Application Name: \*

DummyServiceBroker

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.

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**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 on 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="#">Redeploy</a>   <a href="#">Reload</a>
<input type="checkbox"/>	TemplateLabClient	100	✓	webservices, web	<a href="#">Launch</a>   <a href="#">Redeploy</a>   <a href="#">Reload</a>
<input type="checkbox"/>	TemplateLabEquipment	100	✓	ejb, webservices, web	<a href="#">Launch</a>   <a href="#">Redeploy</a>   <a href="#">Reload</a>
<input type="checkbox"/>	TemplateLabServer	100	✓	ejb, webservices, web	<a href="#">Launch</a>   <a href="#">Redeploy</a>   <a href="#">Reload</a>

## 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.



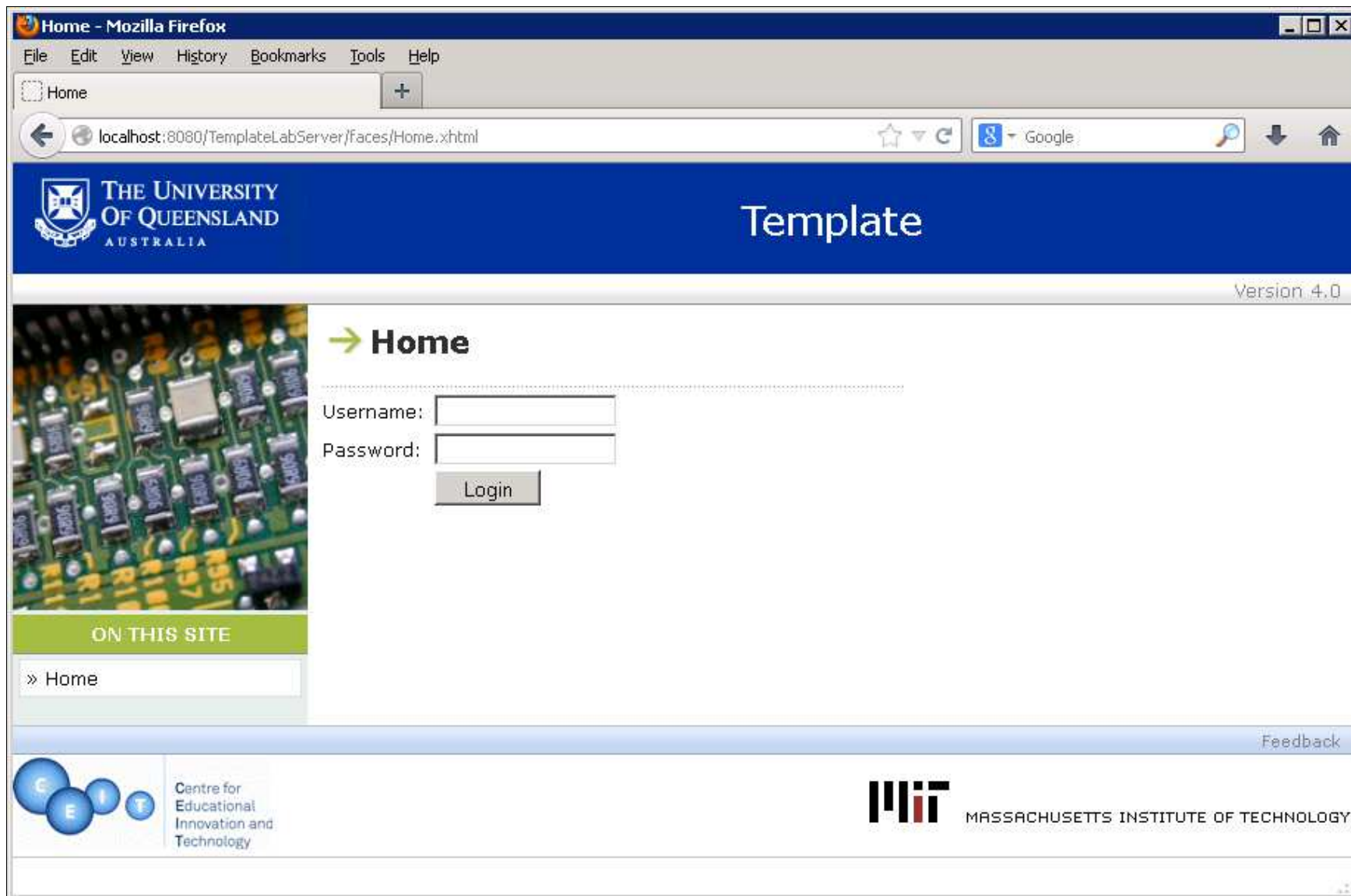
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### Launch Template LabServer

- 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.



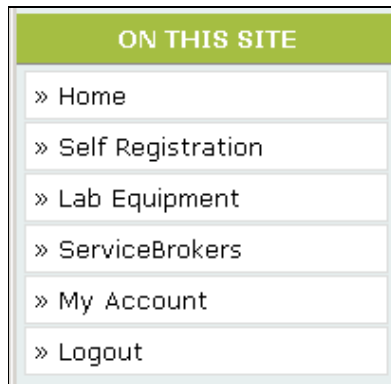
- Log in to the Template LabServer with the following username and password:

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.



 **My Account**

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**User Information:**

Username:	<input type="text" value="manager"/>
First Name:	<input type="text" value="LabServer"/>
Last Name:	<input type="text" value="Manager"/>
Contact Email:	<input type="text" value="manager@your.email.domain"/>
Password:	<input type="password"/>
Confirm Password:	<input type="password"/>


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<sup>1</sup>:

Template Java

Guid<sup>1</sup>:

2CD01113C51C4ca997B059531CD9469D

Create

Service Url<sup>1</sup>:

http://localhost:8080/TemplateLabServer/LabServerWebService

Contact Email:

labserver@your.email.domain

Authenticate:

☒

**Optional Information**

Completed Email<sup>2</sup>:

Failed Email<sup>2</sup>:

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.

- 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:

Select

LabEquipment Unit Information:

Unit:

Service Uri<sup>1</sup>:

Passkey<sup>1</sup>: 

Create

Enabled: ☒

Update

Delete

Test

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:

Select

ServiceBroker Information:

ServiceBroker Name: localhost

ServiceBroker Guid: 196495303F294B13856D7E48872E51CC

Outgoing Passkey<sup>1</sup>: FD3CF16CC855484FB06801379F475837

Allow Access: ☒

Create

Optional Information

Service Url: http://localhost:8080/DummyServiceBroker/ServiceBrokerService

Incoming Passkey<sup>2</sup>:

Update

Delete

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.

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## 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.



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## 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`


Home - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Home


localhost:8080/TemplateLabClient/faces/Home.xhtml

Google

 THE UNIVERSITY OF QUEENSLAND AUSTRALIA

# Template

Version 4.0



## → 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](#)

#### ON THIS SITE

- » Home
- » Setup
- » Status
- » Results

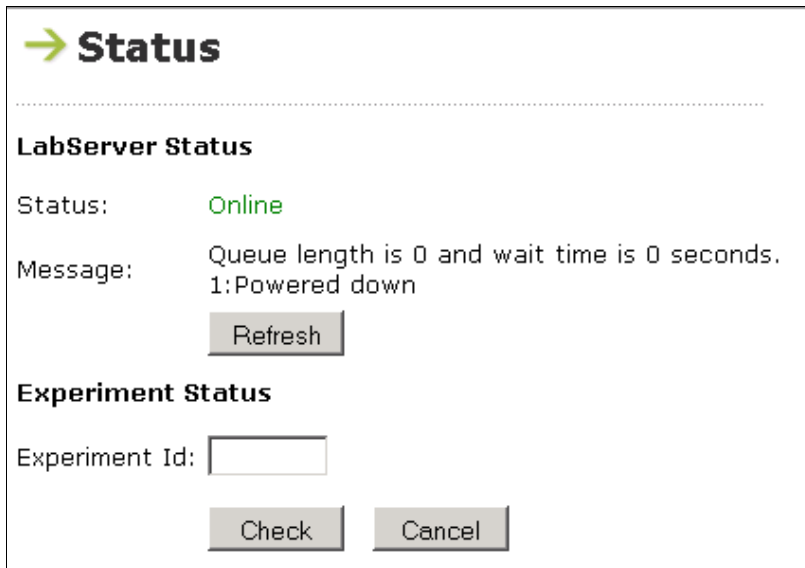
[Feedback](#)

 Centre for Educational

 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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 web page titled "Status" with a green arrow icon. Below the title is a horizontal dotted line. The page is divided into two sections: "LabServer Status" and "Experiment 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\Template\LabClient\LogFiles\LabClient.log* to view the activity of the LabClient application.

- Select the *Setup* menu item.

 **Setup**

---

**Experiment Setups**

Setup:

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:

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


Refresh

**Experiment Status**

Experiment Id:

Check Cancel

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

Refresh


**Experiment Status**

Experiment Id:

Check Cancel

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:

- 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.

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**That's it.**