Gridbus Workflow Engine User Manual

1. Requirements

- IBM TSpace

  A tspaces server is used as a workflow event server. It can be downloaded from http://www.almaden.ibm.com/cs/TSpaces/.

- MySQL

  It is used to record the execution status. It can be downloaded from http://www.mysql.com/.

- Middleware installation

  One of middleware supported by Gridbus broker (www.gridbus.org/broker):
  - ➢ Grid middleware such as Globus 2.4, Globus 4.0
  - ➢ Queuing systems such as Sun N1 Grid Engine 6 (SGE).

- Grid Market Directory (optional)

  It is used as directory service for Grid resource publication and discovery. It can be downloaded from http://www.gridbus.org/gmd.

2. Installation process

a. Unzip the archive (gridbuswf2.0beta.tar) to the directory where you want to install the workflow engine.

b. The following directory structure is created under the gridbuswf2.0beta directory:

   /gridbuswf2.0beta

/lib	(all the libraries needed to run the broker)
/src	(the workflow engine source code)
/example	(examples files)
/license	(licenses for the libraries)
/docs	(user manual)
/schema	(xml schema for xWFL 2.0)
/images	(images for the GUI)

c. Download client jar file for TSpace and add it into the <lib> directory.

d. Config property files in the <gridbuswf2.0beta>.

3. The properties configuration files

There are three properties configuration files: WEProperties, Broker.properties and log4j.properties. The detail of WEProperties is shown in Figure 1.

```
#where to store intermediate data
STORAGEHOST=manjra.cs.mu.oz.au
STORAGEDIR=/home/jiayu/datacenter
STORAGEPORT=34450

#TSpaces server
TSPACESHOST=localhost
TSPACESPORT=8200
#space name for workflow event
WORKFLOWEVENT=WorkflowEvent

#Mysql server
MYSQLURL=jdbc:mysql://localhost/WE
MYSQLUSER=XXXX
MYSQLPASSWORD=XXXX

#Working directory
LOCALDIR=/home/jiayu/datacenter
```

Figure 1. Properties configuration for WEProperties

The detailed configuration of the Broker.properties and log4j.properties can be found in the Gridbus Broker User manual.

4. Getting started using the engine
a. Greate grid proxy by running grid-proxy-init
b. Start TSpace by running ./starttspaces.sh
c. Run workflow engine
   [gridbuswf2.0beta] ./go
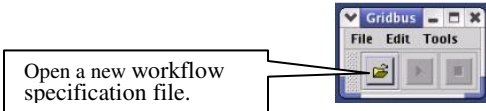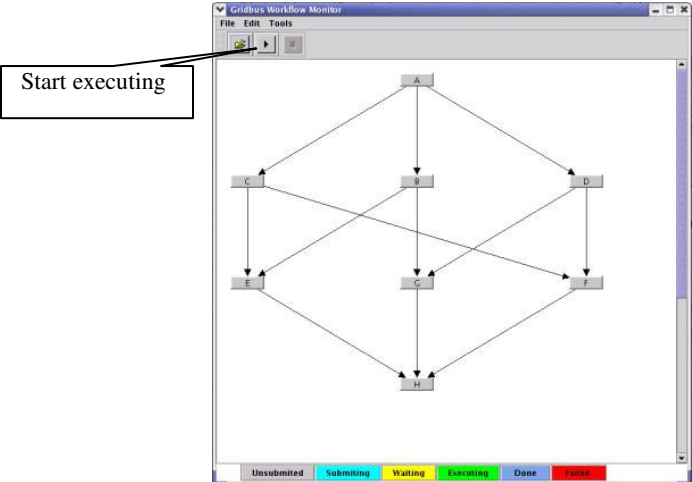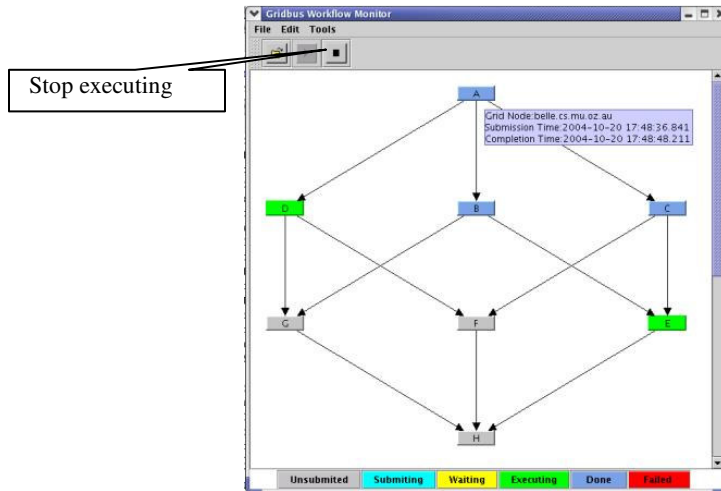
The main window (see Figure 2) will be display.

Open a new workflow specification file.

Figure 2. Main Window

b. Open a workflow description file

Start executing

c. Execute the workflow on the Grid

5. Example

We provide some synthetic workflows and task processing programs for testing purpose. Workflow description and related workflow applications can be found in example directory.