Minutes of workflow research group meeting.
GGF Boston: Oct. 5, 2005, 11am-12:30pm.

1) Chair introduced meeting, explained that the format of the meeting and introduced the three speakers who would be presenting their work.

2) Dennis Gannon of Indiana University gave a talk on the use of workflows in the prediction of hurricanes. This included descriptions of the current state of development of the services used in the prediction services. It highlighted that some services still need to be improved in order to predict these weather systems in real-time. (Brief notes on questions and answers resulting from the talks are given at the end).

3) Ivona Brandic gave a talk on a QoS aware grid workflow language and execution engine based web service technology. This included examples from a use case where medical data is submitted to a workflow system with budget and completion time constraints and how this could be described and executed by the system.

4) Cesare Pautasso gave a talk on modeling and executing heterogeneous grid workflows. This included a demonstration of putting together a workflow in Eclipse that used web services and inbuilt operators in the JOpera workflow systems.

5) The chair asked for comments on the format of the meeting.
Comments:

a) Reserving more time for discussion at the end of the meetings would be good.
b) Question about documents describing the way that this group functions.
    a. Chair pointed out the group's web site and said that possibly more information should be made available on the mailing list about current workflow projects underway.
c) Bruce Barkstrom <b.r.barkstom@larc.masa.gov>, from NASA Langley Research Center asked about research into scalability issues for workflow. His center runs a production environment handling huge amounts of data and ~5000 jobs each day. He expressed concern that most of the workflow projects he is seeing don't handle such large workflows as his users are dealing with, with the exception of the work presented by Dennis.
    a. The chair added that the Pegasus (http://pegasus.isi.edu) work done within the GriPhyN project also used large workflows. The chair also agreed that this was an interesting issue and that we should try to gain a better understanding of scaling problems.
d) It was pointed out that several European groups are looking at workflow issues and that we should make sure that there is an exchange of information with these groups.

7) The chair asked if people would be interest in having a half day workshop on scheduling at a future GGF. General interest was expressed in this idea.

The meeting ended shortly after 12:30pm.

Notes of questions and answers resulting from the three talks:

1) Dennis Gannon

Q: It there way of representing barriers and synchronization?
All sych implicit in the BPEL.

Q: Do they track based on types? Yes, they look at the meta-data on types. Difficult if the meta-data ontology is mismatched: this is not solved.
Does not have iteration right now.
Does not know how to represent exceptions.

Q: Is there a way to give a high level view for management? Could this be used for handling exceptions?
Still need to break dependencies into hierarchies.

Q: Are the tools available? Yes: www.extreme.indiana.edu

Q: Are there ways of specifying when the results are required?
Critical to what they do. Often need user in the loop and need QoS.

Q: Do you assume that apps are installed?
Currently yes, but looking at some VM ideas for dynamic deployment – this is about a year behind schedule.

Q: What is architecture – central or federated?
Currently central, but want to go to federated system to cut down on faults.

Q: Do you have centralized messaging? The services are distributed.

2) Ivona Brandic

Q: Do they consider violation of the contract? Yes, if contract is valid can impose penalties.

Q: Data privacy – how is this handled? Planning to investigate this, but it is not easy.
Other projects done by the group have had very strict security constraints.

Q: Why does it take so long to negotiate QoS? Will it scale to much larger workflows and number of services? This is still to be determined.

Q: How are time zones dealt with? This is handled by system.

Q: Can you renegotiate the QoS? Yes you can stop workflow and renegotiated.

3) Cesare Pautasso

Q: Do you consider where apps are running and what sort of performance you are getting? Yes, it is done using condor class adds.

Q: How do you deal with security? Use certificates + myproxy server.