

Kepler - Bug #4519

SDF Director cannot schedule when composite actor input port is disconnected

11/03/2009 02:41 PM - Oliver Soong

Status:	New	Start date:	11/03/2009
Priority:	Normal	Due date:	
Assignee:	Chad Berkley	% Done:	0%
Category:	general	Estimated time:	0.00 hour
Target version:	2.X.Y	Spent time:	0.00 hour
Bugzilla-Id:	4519		
Description			
A workflow with an RExpression actor with unconnected input ports will work (see attached example 1). However, if I put that RExpression actor inside a composite actor (see attached example 2), the workflow can no longer be scheduled.			
I'm not sure what the "correct" behavior is, but I like being able to have optional ports on RExpression actors and I like wrapping RExpression actors into composite actors, so I would prefer it if the composite actor could be scheduled with disconnected ports.			

History

#3 - 11/03/2009 03:08 PM - Christopher Brooks

Need a test case here.
Also, try selecting "Allow disconnected graphs" in the SDF director.

#4 - 11/03/2009 03:09 PM - Christopher Brooks

Ah, nevermind, I see the test cases.

#5 - 11/03/2009 03:13 PM - Oliver Soong

I tried disconnected graphs, but it still throws the error.

I realize it's a slightly complicated case, as the scheduler would need to check up the chain of ports to see whether it's actually connected. Of course, that code might be useful in general. There's a problem with report design and ports from composite actors, and it might be at least partially related to identifying the actual source port.

#6 - 11/03/2009 03:46 PM - Christopher Brooks

This Ptolemy model has a top level with a const connected to one port of a two port composite. Inside the composite, the two ports are connected to the plus and minus ports of an AddSubtract and the output is connected to a Display.
When the model is run, the error message is:

```
ptolemy.actor.sched.NotSchedulableException: Actors remain that cannot be scheduled!
```

Note that there are many reasons why a graph cannot be scheduled:

- SDF Graphs with feedback loops should have an actor with a delay in the loop, such as a SampleDelay.* The SDF director has an "allowDisconnectedGraphs" parameter, which, when true, permits disconnected SDF graphs.
 - The token consumption rate and production rates might be mismatched. Usually, actors produce one token or consume one token on a port. To produce or consume multiple tokens per firing, add a "tokenConsumptionRate" or "tokenConsumptionRate" parameter to the appropriate port. For details, see the SDF chapter in Volume Three of the Ptolemy II design doc at <http://ptolemy.eecs.berkeley.edu/ptolemyII/designdoc.htm>
- Unscheduled actors:
.sdfCompositeNoR.CompositeActor.Add or Subtract .sdfCompositeNoR.CompositeActor.Display
Scheduled actors:
.sdfCompositeNoR.Constant

The workaround is to not connect the inner connection that goes no where.
I'm not sure if this is a bug or an RFE. It is bug in that the model does not behave as expected, even if the "Allow disconnected ports" is set.
It is an RFE in that the model has a disconnected port.

#7 - 03/27/2013 02:27 PM - Redmine Admin

Original Bugzilla ID was 4519

Files

Unattached RExpression.xml	30 KB	11/03/2009	Oliver Soong
Unattached Composite.xml	31.8 KB	11/03/2009	Oliver Soong
sdfCompositeNoR.xml	27.5 KB	11/03/2009	Christopher Brooks