Workflow-as-a-Service

https://wiki.openstack.org/wiki/Convection
https://etherpad.openstack.org/Convection

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What is Convection?

open source workflow service PROPOSAL providing task and state management which enables cloud applications to run complex multi-step workflows
Why the name Convection?

WFaaS (yawn)

convection *conveys*, definition:

“moving in a continuous stream”

task flows

analogous to Heat/air flow

in convection ovens
Workflow Use Cases

Batch Jobs
sequence(s) of tasks with Start and End
e.g. encode/decode video

Long Running Jobs
persistent job remaining until terminated
e.g. auto-scale policy, or BPM
job run for specified duration
e.g. two day automated stress test
Why talk about this now?

Assertions/Predictions:

Heat will want a Workflow
redoing coding work is bad
cloud API users want Workflow
other services will use Workflow
Workflow is not orchestration

Orchestration above Workflow
  e.g. Heat
Workflow above Orchestration
  Meta-flow

The Dream:
  flexible cloud
  build anything
Why workflow for Heat?

Heat (today)
  accepts mixed declarative/imperative input
  with relatively simple relationships
  and largely linear task execution

Heat (future)
  separated declarative/imperative input
  simple and complex relationships
  asynchronous/simultaneous tasks
Workflow solves

job status management
  job execution management

task execution management
  task dependency management
  task state management
I can imagine...

<insert service names here> using Workflow

“top” command for your cloud
list running workloads
display resource (worker) utilization
kill/restart
If...

we end up wanting a Workflow in Heat
build it so it can be spun into separate service
abstractions for jobs/tasks

we want to build Convection
build it so other services could consume it
and enable custom workflows
Let’s discuss

Do others want this?
  Are you willing/able to help?
  What would be next steps?

Interested?

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Back Slides
Workflow Types

Just-in-Sequence
  (static)
Just-in-Time
  (dynamic)

Both provide for a deterministic Flow Order