Master/Replica Exchange Manager

11. re-submit replicas/job descrp

9. Query for matching replicas

1. Launch BigJobs/BigJob Agents

BigJob.py

2. Post Job Description

3. Launch BigJob Agents

BigJob Agent 1 ..... **BigJob Agent N**

Advert Service

8. Post results

7. collect results

5. Launch   5. Launch   5. Launch   5. Launch

4, 12. Poll for jobs

| Replica 1 | Replica 2 | ..... | Replica N-1 | Replica N |

6. Replica done   6. Replica done

| Replica 1 | Replica 2 | | Replica N-1 | Replica N |

Resource 1 —— 10. Exchange/selection —— Resource N

Co-ordination: Red
Communication: Black
Run:
Green

Centralized Control flow:
i. Master/RE-Manager is used to set the job descriptions and launch the BigJob.py(BigJob Manager) which posts the job description to the advert service.
ii. As and when a BigJob becomes active, BigJob.py launches the BigJob agents.
iii. The bigjob agents poll for jobs in the advert server and allocate the resources to the subjobs
iv. The subjob in this case is the replica. The replicas are now launched
v. The bigjob agents launch their respective replicas and monitor them
vi. the bigjob agent collects the results and posts them to the advert server.
vii. the Master queries the advert server for updated states/results and if it find two matching replicas, it conducts an exchange
viii. master resubmits the replicas/job descriptions to the advert server.
ix. the bigjob agent polls for the jobs and relaunches the replicas

time for each step:
1: 2 seconds
2: 1 second
3: partial queue time
(waits till the BJs get active)
4: 1.5 seconds per sub-job
5: included in 4
6: run time
7: 0.5 seconds
8: included in 7
9: 0.3 seconds
10: 1 sec
11: 1 second per exchange