

Fedora 4 Objects CRUD Performance Testing

CRUD Concurrent Integration Test

Running CRUD integration tests (FedoraCrudConcurrentIT.java in fcrepo-http-api) for simple containers and small content files CREATE, UPDATE, DELETE and RETRIEVE with 2, 4, 8, 16, 32 concurrent threads.

The following test threads are executed exactly once. In other words, in the "2 threads" test, each of the two threads performs exactly one operation. Likewise with the "32 threads" test.

The test was performed on 2014-05-20 with the master branch at this commit: <https://github.com/fcrepo4/fcrepo4/commit/8af7da1cce5c692d092b1228e8f8c8c1dbd0d06d>

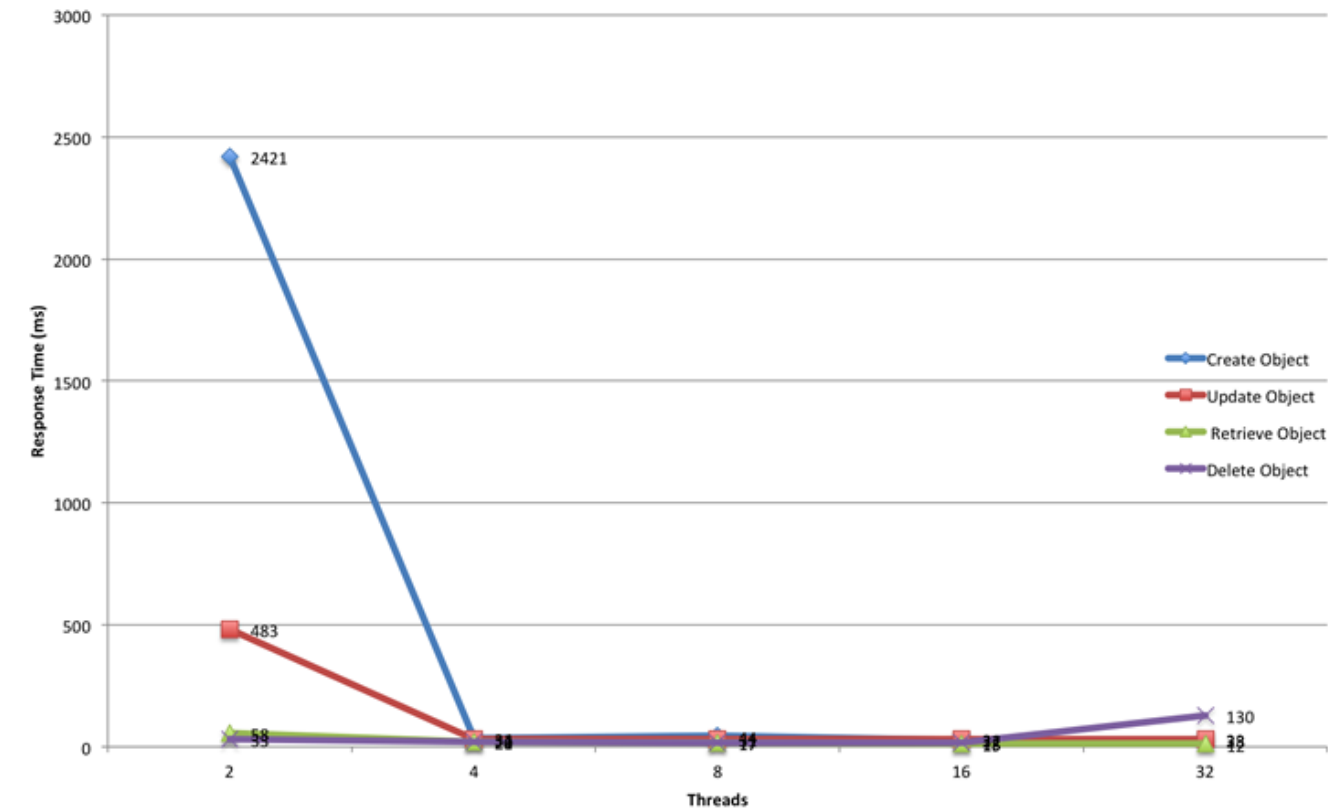
It can be seen that the tests below were run with threads numbering from 2 to 32. The resultant graphs show unexpected behavior at the beginning and the ending of most of these tests; hence the running of the tests twice: with both increasing and decreasing numbers of threads.

In any case, the strange behavior in the initial and final test runs indicates a probably issue with the testing framework.

Average CRUD response time (ms) for simple containers

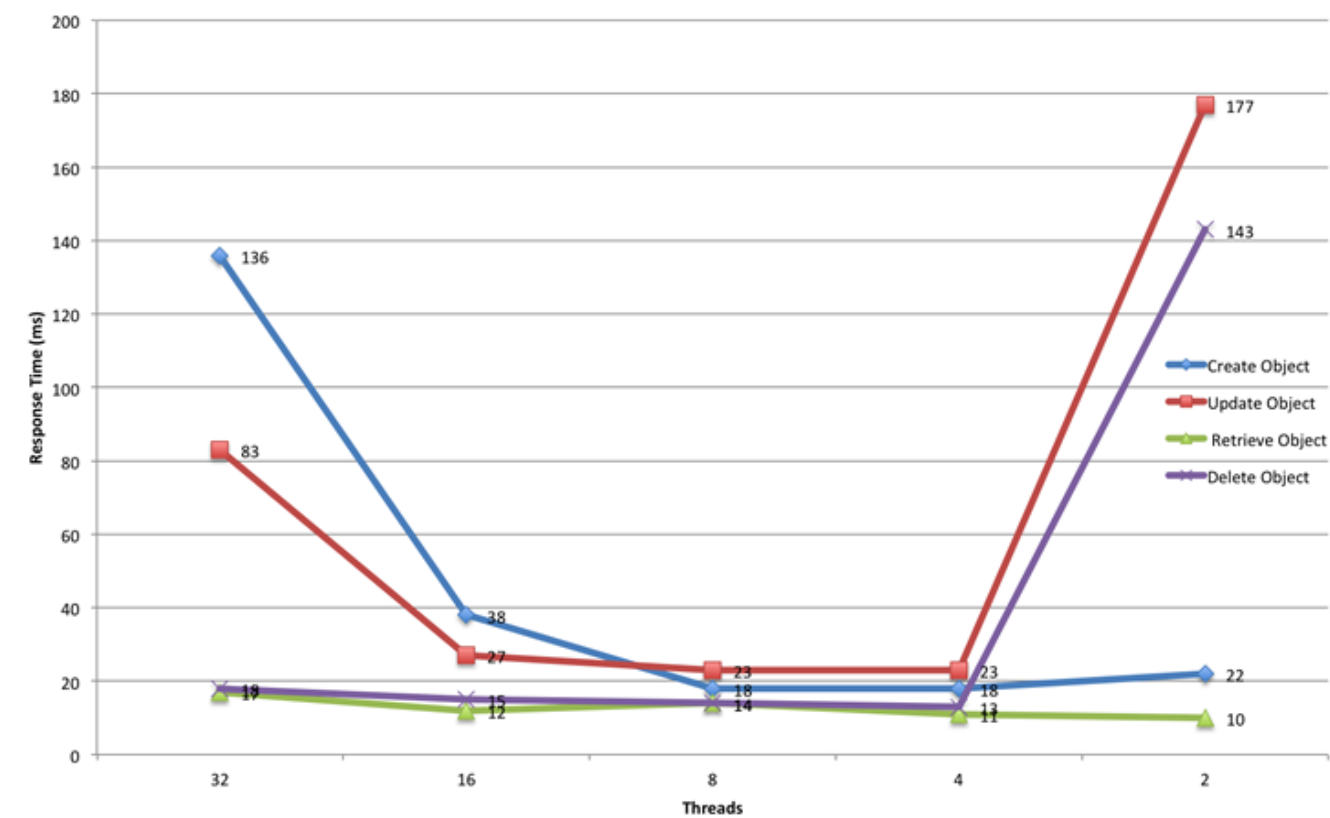
Test result started with threads [2, 4, 8, 16, 32]:

Threads	Create	Update	Retrieve	Delete
2	2421	483	58	33
4	34	32	20	21
8	44	31	17	17
16	27	31	15	18
32	28	33	12	130



Test result started with threads [32, 16, 8, 4, 2]:

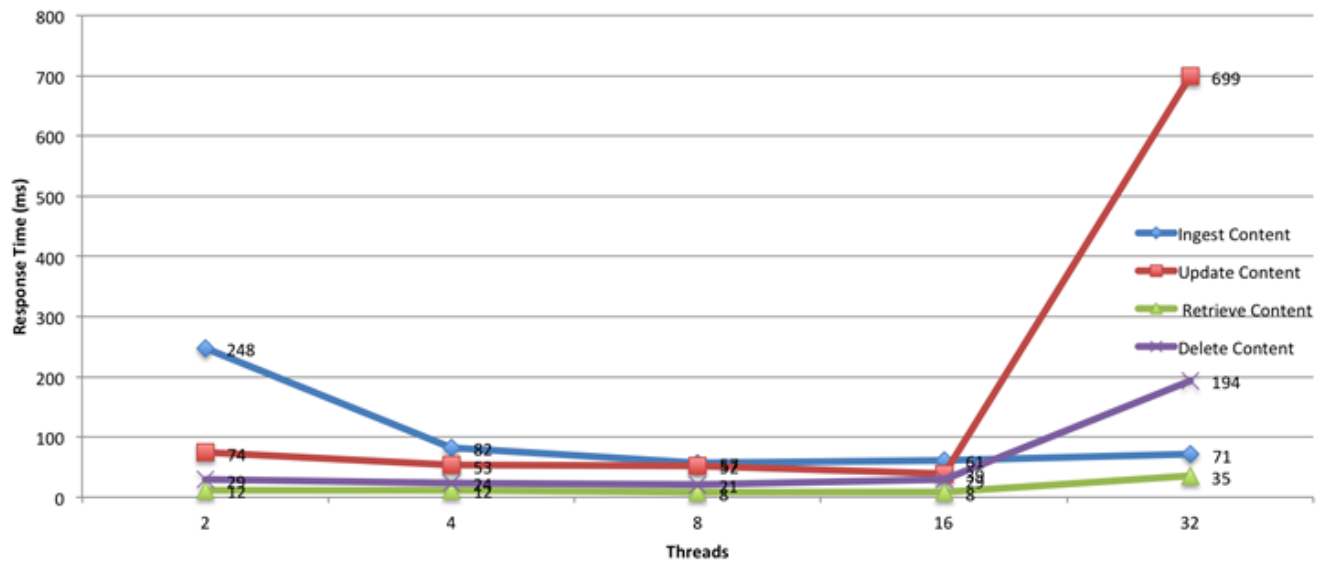
Threads	Create	Update	Retrieve	Delete
32	136	83	17	18
16	38	27	12	15
8	18	23	14	14
4	18	23	11	13
2	22	177	10	143



Average CRUD response time (ms) for content files

Test result started with threads [2, 4, 8, 16, 32]:

Threads	Ingest	Update	Retrieve	Delete
2	248	74	12	29
4	82	53	12	24
8	57	52	8	21
16	61	39	8	29
32	71	699	35	194



Test result started with threads [32, 16, 8, 4, 2]:

Threads	Create	Update	Retrieve	Delete
32	81	56	8	23
16	68	56	8	17
8	55	30	5	21
4	48	34	6	16
2	110	838	5	297

