

Fedora 6 Test Results

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Testing on AWS

2020-12-16

Tester

- [Andrew Woods](#)

Test

- [Test 4 - number-of-containers---default](#)
- Same as test below (2020-12-09), with the only difference being that the OCFL default digest algorithm was set to SHA256 instead of the default SHA512

Results

- Terminated at 32,203,148 empty containers - no space left on 1-TB device
- Duration: 5 days 4 hrs 10 mins

```
summary = 32203148 in 124:10:42 = 72.0/s Avg: 49 Min: 3 Max: 1126 Err: 1 (0.00%)  
Tidying up ... @ Wed Dec 16 03:41:11 UTC 2020 (1608090071444)
```

- [Grafana dashboard](#)

- `nohup jmeter -Dfedora_4_context=/fcrepo/rest -Dcontainer_threads=4 -n -t ~/fcrepo4-jmeter/fedora.jmx > test-out.txt`

Results

- Terminated at 31,593,788 empty containers - no space left on 1-TB device
- Duration: 5 days 7 hr 49 mins

summary = 31593788 in 127:49:38 = 68.7/s Avg: 52 Min: 3 Max: 60068 Err: 1 (0.00%)
Tidying up ... @ Wed Dec 09 03:19:59 UTC 2020 (1607483999742)

- Grafana dashboard



Environment

- Same as [2020-12-04 environment](#)

2020-12-04 Tester

- [Andrew Woods](#)

Test

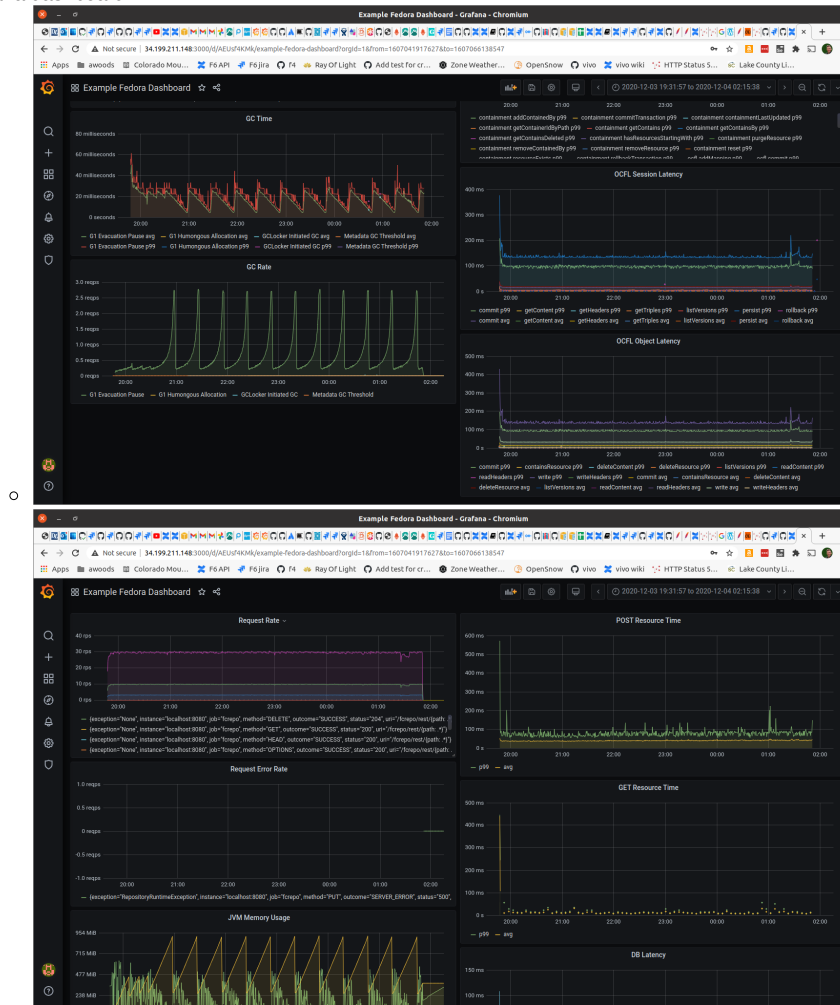
- Test 6 - Number of Archival Groups with nested binaries
- `nohup jmeter -Dfedora_4_context=/fcrepo/rest -Dcontainer_ag_threads=4 -n -t ~/fcrepo4-jmeter/fedora.jmx > test-out.txt`

Results

- Terminated at 1,143,873 archival groups - no space left on 1-TB device
- Duration: 6 hrs 3 mins

summary = 1143873 in 06:03:53 = 52.4/s Avg: 73 Min: 4 Max: 2055 Err: 4 (0.00%)
Tidying up ... @ Fri Dec 04 06:50:21 UTC 2020 (1607064621527)

- Grafana dashboard



Environment

1. Instance type: t3.xlarge
 - a. 4 vCPUs
 - b. 16 GB memory
2. Fedora
 - a. Build #1d26867e (2020-12-03)
3. PostgreSQL in Docker colocated on instance
 - a. v12.3
4. Tomcat info (java -cp /usr/share/tomcat9/lib/catalina.jar org.apache.catalina.util.ServerInfo)
 - a. Server version: Apache Tomcat/9.0.16 (Ubuntu)
Server built: Sep 11 2019 19:47:51 UTC
Server number: 9.0.16.0
OS Name: Linux
OS Version: 5.4.0-1030-aws
Architecture: amd64
JVM Version: 11.0.9.1+1-Ubuntu-0ubuntu1.18.04
JVM Vendor: Ubuntu

5. JVM (java -version)

```
a. openjdk version "11.0.9.1" 2020-11-04
OpenJDK Runtime Environment (build 11.0.9.1+1-Ubuntu-0ubuntu1.18.04)
OpenJDK 64-Bit Server VM (build 11.0.9.1+1-Ubuntu-0ubuntu1.18.04, mixed mode, sharing)
```

6. JAVA_OPTS (in /etc/default/tomcat9)

```
a. JAVA_OPTS="-Djava.awt.headless=true -server \
-Xms1G -Xmx2G -XX:MaxNewSize=1G \
-Dfcrepo.activemq.directory=/fcrepo/activemq \
-Dfcrepo.home=/fcrepo \
-Dfcrepo.db.url=jdbc:postgresql://localhost:5432/fcrepo \
-Dfcrepo.db.user=*** \
-Dfcrepo.db.password=*** \
-Dfcrepo.metrics.enable=true \
-XX:+HeapDumpOnOutOfMemoryError \
-XX:HeapDumpPath=/fcrepo/mem"
```

Early tests

The following tests were performed prior to the resolution of ingest memory leaks.

Tester

- [Andrew Woods](#)

Tests on t2.large

1. [Instance type](#): t2.large
 - a. 2 vCPUs
 - b. 8 GB memory

PostgreSQL

Environment

1. Fedora deployed into Tomcat 9
 - a. 6.0.0-SNAPSHOT | Build #3e25823d (2020-09-09)
2. [PostgreSQL running in Docker](#)

Tests

1. [JMeter test 4](#) - Number of containers - default

Results

1. Failed at 305,308 resources - no space left on device
 - a. summary + 121 in 00:00:26 = 4.7/s Avg: 197 Min: 35 Max: 6224 Err: 1 (0.83%) Active: 0 Started: 1 Finished: 1
summary = 305308 in 04:54:47 = 17.3/s Avg: 53 Min: 3 Max: 7444 Err: 1 (0.00%)
Tidying up ... @ Thu Sep 10 01:10:25 UTC 2020 (1599700225557)

```
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: java.io.UncheckedIOException: java.nio.file.FileSystemException: /opt/f6/data/staging
/c6cd095e-7c40-4659-8532-a08d70342d59: No space left on device
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.storage.ocfl.DefaultOcflObjectSession.createStagingPath
(DefaultOcflObjectSession.java:490)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.storage.ocfl.DefaultOcflObjectSession.writeResource
(DefaultOcflObjectSession.java:151)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.FcrepoOcflObjectSessionWrapper.
lambda$writeResource$0(FcrepoOcflObjectSessionWrapper.java:64)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.FcrepoOcflObjectSessionWrapper.exec
(FcrepoOcflObjectSessionWrapper.java:164)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.FcrepoOcflObjectSessionWrapper.writeResource
(FcrepoOcflObjectSessionWrapper.java:64)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.AbstractRdfSourcePersister.writeRdf
(AbstractRdfSourcePersister.java:139)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.AbstractRdfSourcePersister.persistRDF
(AbstractRdfSourcePersister.java:76)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.CreateRdfSourcePersister.persist
```

```
(CreateRdfSourcePersister.java:75)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.persistence.ocfl.impl.OcflPersistentStorageSession.persist
(OcflPersistentStorageSession.java:160)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.kernel.impl.services.CreateResourceServiceImpl.perform
(CreateResourceServiceImpl.java:182)
Sep 10 01:10:23 ip-10-0-0-234 tomcat9[6964]: at org.fcrepo.http.api.FedoraLdp.createObject(FedoraLdp.java:622)
```

Tests on t2.medium

1. [Instance type](#): t2.medium
 - a. 2 vCPUs
 - b. 4 GB memory

MariaDB

Environment

1. Fedora deployed into Tomcat 9
 - a. 6.0.0-SNAPSHOT | Build #9ede6c3c (2020-08-07)
2. [MariaDB running in Docker](#)

Tests

1. [JMeter test 2](#) - Size of files - small

Results

1. Instance froze (became unresponsive) before 100,000 resources

Tests on t2.xlarge

1. Instance type: t2.xlarge
 - a. 4 vCPUs
 - b. 16 GB memory

MariaDB

Environment

1. Fedora deployed into Tomcat 9
 - a. 6.0.0-SNAPSHOT | Build #9ede6c3c (2020-08-07)
2. [MariaDB running in Docker](#)

Tests

1. [JMeter test 2](#) - Size of files - small

Results

1. Failed at 12,799 resources
 - a. summary + 72 in 00:00:10 = 7.0/s Avg: 138 Min: 62 Max: 147 Err: 1 (1.39%) Active: 0 Started: 1 Finished: 1
summary = 12799 in 00:18:29 = 11.5/s Avg: 81 Min: 3 Max: 270 Err: 1 (0.01%)

```
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: ERROR 23:48:10.279 (TransactionImpl) Failed to rollback storage in transaction
c6af5528-8883-42f1-9d5f-67a352a5c1fb
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: org.fcrepo.persistence.api.exceptions.PersistentStorageException: Unable to rollback
storage session c6af5528-8883-42f1-9d5f-67a352a5c1fb completely due to the following errors:
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: Cannot rollback object <info:fedora/28cfe2b3-162e-4d7b-ad19-aa36cb4ea95a>. Rollback
to previous version not yet implemented.
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.persistence.ocfl.impl.OcflPersistentStorageSession.
rollbackCommittedSessions(OcflPersistentStorageSession.java:415)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.persistence.ocfl.impl.OcflPersistentStorageSession.rollback
(OcflPersistentStorageSession.java:360)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.kernel.impl.TransactionImpl.lambda$rollback$0(TransactionImpl.java:112)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.kernel.impl.TransactionImpl.execQuietly(TransactionImpl.java:237)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.kernel.impl.TransactionImpl.rollback(TransactionImpl.java:111)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.kernel.impl.TransactionImpl.commit(TransactionImpl.java:92)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.kernel.impl.TransactionImpl.commitIfShortLived(TransactionImpl.java:177)
Sep 08 23:48:10 ip-10-0-0-234 tomcat9[3189]: at org.fcrepo.http.api.FedoraLdp.createObject(FedoraLdp.java:626)
```

PostgreSQL

Environment

1. Fedora deployed into Tomcat 9
 - a. 6.0.0-SNAPSHOT | Build #9ede6c3c (2020-08-07)
2. [PostgreSQL running in Docker](#)

Tests

1. [JMeter test 2](#) - Size of files - small

Results

1. Failed at 264,792 resources
 - a. summary + 1249 in 00:00:30 = 41.6/s Avg: 19 Min: 3 Max: 108 Err: 0 (0.00%) Active: 1 Started: 1 Finished: 0
summary = 263967 in 01:43:56 = 42.3/s Avg: 19 Min: 2 Max: 665 Err: 0 (0.00%)
summary + 825 in 00:00:20 = 41.1/s Avg: 20 Min: 17 Max: 583 Err: 1 (0.12%) Active: 0 Started: 1 Finished: 1
summary = 264792 in 01:44:16 = 42.3/s Avg: 19 Min: 2 Max: 665 Err: 1 (0.00%)

Sep 09 01:45:57 ip-10-0-0-234 tomcat9[4233]: INFO 01:45:57.933 (FedoraLdp) Delete resource 'perf/perf_119336445'
Sep 09 01:46:19 ip-10-0-0-234 tomcat9[4233]: INFO 01:46:19.604 (TransactionImpl) Rolling back transaction b5612f9d-57de-47a7-9069-4f579afe62b5
Sep 09 01:46:19 ip-10-0-0-234 tomcat9[4233]: INFO 01:46:19.604 (OcflPersistentStorageSession) Rolling back storage session b5612f9d-57de-47a7-9069-4f579afe62b5
Sep 09 01:46:20 ip-10-0-0-234 tomcat9[4233]: ERROR 01:46:20.054 (WildcardExceptionMapper) Exception intercepted by WildcardExceptionMapper: Failed to commit object <info:fedora/7d4d0ab1-cebc-4822-bf64-3a7f3353a7ce> in session <b5612f9d-57de-47a7-9069-4f579afe62b5>