Metacat - Bug #7167

MNodeService.updateSystemMetadata() needs to validate obsolescence chain pids

12/07/2016 08:36 AM - Chris Jones

Status:	Resolved	**Start date:**	12/07/2016
Priority:	Normal	**Due date:**	
Assignee:	Jing Tao	**% Done:**	0%
Category:	metacat	**Estimated time:**	0.00 hour
Target version:	2.8.1	**Spent time:**	0.00 hour
Bugzilla-Id:			

Description

When calling MNodeService.updateSystemMetadata(), if there is a circular reference in the obsoletes or obsoletedBy fields, Metacat will throw a StackOverflow exception when trying to index the system metadata. For instance, if the identifier of the object obsoletes itself or is obsoletedBy itself, we get an error. This is most likely the case too if an object obsoletes another object, and in turn, that object obsoletes the previous object.

We need to change updateSystemMetadata() so that it validates the obsoletes and obsoletedBy fields, making sure they don't contain the identifier of the submitted system metadata, or other circular references.

Here's an example system metadata that caused this:

```
<?xml version="1.0" encoding="UTF-8"?>
<d1_v2.0:systemMetadata xmlns:d1_v2.0="http://ns.dataone.org/service/types/v2.0" xmlns:d1="http://
ns.dataone.org/service/types/v1">
    <serialVersion>8</serialVersion>
    <identifier>urn:uuid:feed9eee-21cf-4ba8-bb9b-7d036920f452</identifier>
    <formatId>http://www.openarchives.org/ore/terms</formatId>
    <size>3968</size>
    <checksum algorithm="SHA-1">fa272e960e5c379f199e1f35ac269edef113908f</checksum>
    <submitter>http://orcid.org/0000-0003-4703-1974</submitter>
    <rightsHolder>http://orcid.org/0000-0003-4703-1974</rightsHolder>
    <accessPolicy>
        <allow>
            <subject>http://orcid.org/0000-0002-0381-3766</subject>
            <permission>read</permission>
            <permission>write</permission>
            <permission>changePermission</permission>
        </allow>
        <allow>
            <subject>public</subject>
            <permission>read</permission>
        </allow>
    </accessPolicy>
    <replicationPolicy replicationAllowed="true" numberReplicas="2"/>
    <obsoletes>urn:uuid:feed9eee-21cf-4ba8-bb9b-7d036920f452</obsoletes>
    <obsoletedBy>urn:uuid:bbca6070-1ce7-49d0-9a56-04a324efc83c</obsoletedBy>
    <archived>false</archived>
    <dateUploaded>2016-12-06T20:51:32.819+00:00</dateUploaded>
    <dateSysMetadataModified>2016-12-06T22:03:22.669+00:00</dateSysMetadataModified>
    <originMemberNode>urn:node:KNB</originMemberNode>
    <authoritativeMemberNode>urn:node:KNB</authoritativeMemberNode>
    <fileName>file7f071d1b5de6</fileName>
</d1_v2.0:systemMetadata>
```

and here's the stack trace:

```
metacat 20161206-14:04:04: [ERROR]: Error writing exception to stream. null [edu.ucsb.nceas.metaca
t.restservice.D1ResourceHandler]
Exception in thread "ajp-bio-8009-exec-5355" java.lang.StackOverflowError
    at java.util.Properties.getProperty(Properties.java:970)
    at java.lang.System.getProperty(System.java:747)
```

```
    at sun.net.NetProperties.get(NetProperties.java:92)
    at sun.net.spi.DefaultProxySelector$2.run(DefaultProxySelector.java:216)
    at sun.net.spi.DefaultProxySelector$2.run(DefaultProxySelector.java:200)
    at java.security.AccessController.doPrivileged(Native Method)
    at sun.net.spi.DefaultProxySelector.select(DefaultProxySelector.java:199)
    at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:384)
    at java.net.Socket.connect(Socket.java:576)
    at java.net.Socket.connect(Socket.java:525)
    at java.net.Socket.<init>(Socket.java:425)
    at java.net.Socket.<init>(Socket.java:208)
    at org.postgresql.core.PGStream.<init>(PGStream.java:58)
    at org.postgresql.core.v3.ConnectionFactoryImpl.openConnectionImpl(ConnectionFactoryImpl.java:
77)
    at org.postgresql.core.ConnectionFactory.openConnection(ConnectionFactory.java:65)
    at org.postgresql.jdbc2.AbstractJdbc2Connection.<init>(AbstractJdbc2Connection.java:117)
    at org.postgresql.jdbc3.AbstractJdbc3Connection.<init>(AbstractJdbc3Connection.java:30)
    at org.postgresql.jdbc3.Jdbc3Connection.<init>(Jdbc3Connection.java:24)
    at org.postgresql.Driver.connect(Driver.java:235)
    at java.sql.DriverManager.getConnection(DriverManager.java:571)
    at java.sql.DriverManager.getConnection(DriverManager.java:215)
    at edu.ucsb.nceas.metacat.database.DBConnection.openConnection(DBConnection.java:371)
    at edu.ucsb.nceas.metacat.database.DBConnection.openConnection(DBConnection.java:344)
    at edu.ucsb.nceas.metacat.database.DBConnection.<init>(DBConnection.java:82)
    at edu.ucsb.nceas.metacat.database.DBConnectionPool.getDBConnection(DBConnectionPool.java:287)
    at edu.ucsb.nceas.metacat.EventLog.getD1Report(EventLog.java:568)
    at edu.ucsb.nceas.metacat.EventLog.getIndexFields(EventLog.java:151)
    at edu.ucsb.nceas.metacat.index.MetacatSolrIndex.submit(MetacatSolrIndex.java:195)
    at edu.ucsb.nceas.metacat.index.MetacatSolrIndex.submit(MetacatSolrIndex.java:200)
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History

#1 - 12/08/2016 02:29 PM - Jing Tao

- Status changed from New to Resolved

Added methods to check the circular obsoletes/obsoletedBy chains in the D1NodeService class. Also wrote the junit test method to test them.