

**Application Server - Tomcat, Zookeeper and Solr**

December 4

Contents

### Application Server - Tomcat, Zookeeper and Solr

### **SOP- APpserver (Tomcat)**

Tomcat runs under supervisor in the RSDMT App servers.

#supervisorctl status|stop|start tomcat

The supervisor configuration file is: /etc/supervisord.d/tomcat.conf

Tail the logs (tail -f /opt/tomcat/logs/\*.log) and verify listening on ports 8080, 8443 after restart.

The relevant log files are the following in /opt/tomcat/logs/

* localhost.YYYY-MM-DD.log
* catalina.YYYY-MM-DD.log
* govapps.log
* rsdglass.log
* rsdpolicymanager.log
* stdout.log

Tomcat status script for CPU, Memory usage and Thread Usage is  /opt/scripts/TomcatState.sh

echo '### Tomcat CPU & Memory Usage ###'

ps -e -o pid,uname,pcpu,pmem,comm | head -1 && ps -e -o pid,uname,pcpu,pmem,comm | grep java

echo '### Tomcat Thread Count Usage ###'

curl --silent --user 'sst-support:hXT7iO#BQ5Lk' <http://localhost:8080/manager/jmxproxy?qry=Catalina:name=%22http-bio-8443%22,type=ThreadPool> |egrep 'maxThreads|currentThreadCount|currentThreadsBusy'

Or, VPN and use the following manager URL with the credentials:

<http://10.169.3.13:8080/manager/status>

<http://10.169.3.123:8080/manager/status>

ID: sst-support

PWD: hXT7iO#BQ5Lk

How to get a tomcat thread dump when you logged in as root

--> execute the below command to get the tomcat thread dump

  root@us-rsdmt-prd-app1:/home/mreddy#  /usr/java/latest/bin/jstack -F "PID of the tomcat" > file.txt

the above command you can execute even if you are in root access forcefully.

use the below command to get the PID of tomcat

ps -ef | grep tomcat

tail -f stdout.log

you can see the tomcat completely up or not when you tail the stdout.log.

**jute.maxbuffer** should be set to 10485760. The property -Djute.maxbuffer=10485760 can be verified in the tomcat process (ps -ef | grep tomcat) and in the supervisor startup file (/etc/supervisord.d/tomcat.conf)

Hazelcast configuration

Application clustering and caching is provided by Hazelcast, an in-memory data grid software. Both app servers need to be added to the hazelcast Zookeeper configuration.

/rsd/system/hazelcast/network/join/tcpip/enabled = true

/rsd/system/hazelcast/network/join/tcpip/member = MLT,[10.169.3.13,10.169.3.123] (Example from NA PRD with the IP addresses of App srv1 and srv2)

The cache management page can be viewed at: https://commandig.govern.recall.com/RSDGlass/cacheManagement.jsp

### **SOP – Zookeeper**

#/opt/zookeeper/bin/zkServer.sh status|stop|start

Run as user 'zkadmin'

Stop/Start one at a time. Majority of the ensemble (2 out of 3) servers should be up for the ZK cluster to be up.

 Do not use service zookeeper stop|start|status

 It may take several minutes for the server to be up when the transaction log and snapshots size is large. Keep checking the status until it registers as a Follower/Leader in the ensemble

 Config file: /opt/zookeeper/conf/zoo.cfg

The properties modified from default values are initLimit which is set to  100  and maxClientCnxns to 250

JVM params, jute.maxbuffer and apminsight are set in /opt/zookeeper/conf/java.env

 Zookeeper Client: /opt/zookeeper/bin/zkCli.sh

* Solr nodes: ls /solr/live\_nodes
* Solr Overseer Queue: ls /solr/overseer/queue
* Clusterstate: get /solr/clusterstate.json
* Configs and Collections: get /solr/configs and get /solr/collections

 Data Directory Cleanup: To be run as a nightly cron. To cleanup transaction logs and snapshots.

/opt/zookeeper/bin/zkCleanup.sh -n 10

 Monitoring with 4 letter words:

ruok - Tests if server is running in a non-error state. The server will respond with imok if it is running. Otherwise it will not respond at all.

#echo ruok | nc localhost 2181

envi - Print details about serving environment

stat - Brief details of the server and connected clients

conf - details about serving configuration

srvr- Details of the server

mntr - List of variables to monitor health of the cluster

Ref: <https://zookeeper.apache.org/doc/trunk/zookeeperAdmin.html>

 Logs: /opt/zookeeper/bin/zookeeper.out

### **SOP – Solr**

Solr nodes are managed with supervisor

#supervisorctl status|stop|start solr1/solr2/solr3/solr4 in the respective Solr1/2/3/4 servers

 Supervisor configuration: /etc/supervisord.d/solr1.conf (or solr2, solr3, solr4.conf). The zkHost, Java min/max heap size, apminsight, and jute.maxbuffer params are set in this conf file (command)

 Stop|Start Solr nodes one at a time. It can take several minutes for the server to reinitialize. Verify it is listening in the appropriate port (8085, 8086, 8087, 8088) .Verify /solr/live\_nodes in Zookeeper with zkCli.sh that the respective solr node is registered as a live node.

 Logs: /opt/solr/solr1/logs/ (Replace solr1 with solr2, solr3, solr4 on the respective nodes)

* solr.log
* solr1-stdout.log

 There is a one-on-one mapping between a RSD TenantID and Collection name.

The following command checks the clusterstatus of the collection R11407 (RSD TenantID is also R11407)

#curl <http://10.169.3.8:8085/solr/admin/collections?action=clusterstatus&collection=R11407>

Delete collection:

#curl "<http://10.169.3.8:8085/solr/admin/collections?action=DELETE&name=R19085>"

Create Collection with 1 shard 2 replica:

#curl <http://10.169.3.8:8085/solr/admin/collections?action=CREATE&name=R19085&numShards=1&replicationFactor=2&maxShardsPerNode=1&collection.configName=R19085>

 Monitor the size of the Overseer queue this can be done by getting value from Zookeeper directly or

via the Solr web API

<http://10.169.3.8:8085/solr/admin/collections?action=CLUSTERSTATUS>

<http://10.169.3.8:8085/solr/admin/collections?action=OVERSEERSTATUS>

Monitor the SolrCloud for Shards which are active/recovering/recovery failed/down:

<http://10.169.3.8:8085/solr/admin/>