Deploying ZK Clusters

Purpose

This SOP details the deployment of a single ZK cluster in staging to enable creation and testing of a ZK utility for high volumes of parallel calls and processors. This will eventually be used to support ZooKeeper deployment in production.

Overview

- Apache ZooKeeper is installed on each server in the ensemble.
- The ZooKeeper properties file is configured (zoo.cfg) to specify data directory, client port, and ensemble detail settings.
- Each server points to the others in the ensemble.
- ZooKeeper keeps data in memory, so memory settings are adjusted based on available RAM.
- The ZK cluster is self-hosted. It is downloaded and unpacked by the Ops Team.
- Just one cluster is needed on the three EC2 instances in stage.

Procedure

Install Apache ZooKeeper on each server in the ensemble.

1. **Download the lastest version of ZooKeeper** at http://zookeeper.apache.org/releases.html
2. **Extract the tar file** using the following commands:

   ```
   $ cd opt/
   $ tar -zxf zookeeper-3.4.6.tar.gz
   $ cd zookeeper-3.4.6
   $ mkdir data
   ```

3. **Create the configuration file**. Open the configuration file named conf/zoo.cfg using the command vi conf/zoo.cfg and all of the following parameters to set as a starting point:

   ```
   $ vi conf/zoo.cfg

   tickTime = 2000
   dataDir = /path/to/zookeeper/data
   clientPort  = 2181
   initLimit = 5
   syncLimit = 2
   ```

Once the configuration file has been saved successfully, return to the terminal again. The ZooKeeper server can now be started.

4. **Start the ZooKeeper server**.

   Here are the specific details for server zoo.cfg:

   ```
   dynamicConfigFile=/zookeeper/conf/zoo_replicated.cfg.dynami
   c

   tickTime=2000
   dataDir=/var/lib/zookeeper/ <---- change this to attached
   EBS volume?
   initLimit=5
   syncLimit=2

   reconfigEnabled=true
   autopurge.purgeInterval=12
   DigestAuthenticationProvider.enabled=false

   admin.enableServer=true
   admin.serverPort=8080

   zoo_replicated.cfg.dynamic

   server.1=125.23.63.23:2780:2783:participant;2791
   server.2=125.23.63.24:2781:2784:participant;2791
   server.3=125.23.63.25:2782:2785:participant;2791
   ```

   Execute the following command:

   ```
   $bin/zkServer.sh start
   ```

   After executing this command successfully, this response should be received:

   ```
   $ JMX enabled by default
   $ Using config: /Users/ ../zookeeper-3.4.6/bin/
   ../conf/zoo.cfg
   $ Starting zookeeper … STARTED
   ```