zookeeper集群搭建

ZooKeeper是一个分布式的，开放源码的分布式应用程序协调服务，是Google的Chubby一个开源的实现，是大数据框架Hadoop和Hbase、Elasticsearch的重要组件。

目录

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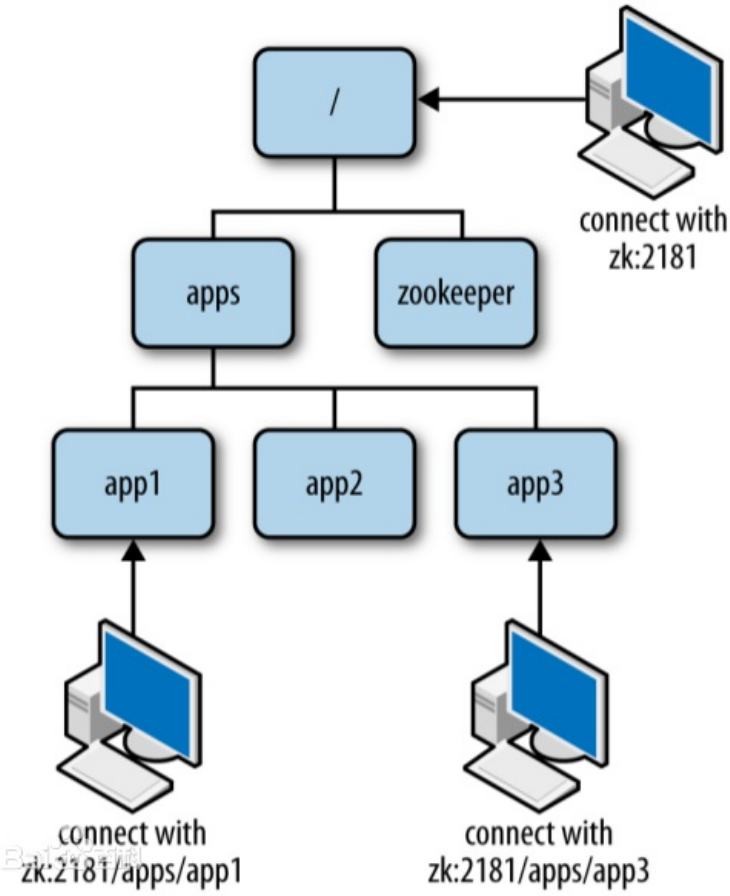
1. 概述：

Zookeeper是Apache的一个java项目，属于Hadoop系统，扮演管理员的角色。因本文偏向于zk集群的部署搭建，所以对zk的原理不做过多概述。点击了解Zookeeper技术原理



1.1 系统依赖

- Java 8
- zookeeper
- Centos 7

1.2 安装包

点击获取zookeeper安装程序，大小约9M左右。

1.3 Zookeeper集群

CPU： 8 Intel(R) Xeon(R) CPU E5-2670 0 @ 2.60GHz

内存： 16G

磁盘空间：100G

服务器	server-id	install path
10.101.3.107	1	/applications/zookeeper
10.101.3.108	2	/applications/zookeeper
10.101.3.109	3	/applications/zookeeper

2.快速部署：

在服务器上安装jdk1.8，由于系统模板已经集成jdk 1.8.0_262-b10,所以这里不在单独安装。

> 安装思路：先选择其中任意一台服务器上配置好服务，然后把程序远程拷贝到其它节点，再到各个节点分配好相应的server-id，最好启动每台服务器上的zk服务完成部署。

2.1 下载Zookeeper程序

> 请下载1.2中链接的安装包程序。

2.2 解压zookeeper到/applications目录

解压命令：

```
# 若无则创建此目录
mkdir /applications
tar zxvf  apache-zookeeper-3.5.8-bin.tar.gz -C /applications
```

重命名目录：

```
cd /applications
mv apache-zookeeper-3.5.8-bin zookeeper
```

2.3 配置zookeeper

备份默认配置：

```
# 备份默认配置
cp zookeeper/conf/zoo_sample.cfg zookeeper/conf/zoo_sample.cfg.bak
mv zookeeper/conf/zoo_sample.cfg zookeeper/conf/zoo.cfg
# 注释掉zoo.cfg所有配置
```

修改如下：

```
tickTime=2000
dataLogDir=/applications/zookeeper/logs
dataDir=/applications/zookeeper/data
```

```
clientPort=2181
initLimit=10
syncLimit=5
autopurge.snapRetainCount=500
autopurge.purgeInterval=24
server.1=10.101.3.107:2888:3888
server.2=10.101.3.108:2888:3888
server.3=10.101.3.109:2888:3888
```

2.4 生成数据和日志目录

依据上一步中的配置，生成目录指令如下：

```
# 生成日志目录
mkdir -p /applications/zookeeper/logs
# 生成data目录
mkdir -p /applications/zookeeper/data
```

2.5 远程拷贝zookeeper到各个节点

远程拷贝指令

```
# 远程拷贝到10.101.3.108，输入root账户的密码完成传输
scp -r applications/ root@10.101.3.108:/
# 远程拷贝到10.101.3.109，输入root账户的密码完成传输
scp -r applications/ root@10.101.3.109:/
```

效果如下：

```
[root@sh107 /]# scp -r applications/ root@10.101.3.108:/
root@10.101.3.108's password:
```

2.6 给zookeeper各节点分配server-id

此步骤需要远程登录到各个节点进行手动分配。

```
#10.101.3.107节点的server-id分配指定为1；
echo "1"> /applications/zookeeper/data/myid
#10.101.3.108节点的server-id分配指定为2；
echo "2"> /applications/zookeeper/data/myid
#10.101.3.109节点的server-id分配指定为3；
echo "3"> /applications/zookeeper/data/myid
```

查看分配结果如下：

```
[root@sh107 /]# cat /applications/zookeeper/data/myid
1
You have new mail in /var/spool/mail/root
```

2.7 启动zk服务

分别进入到各节点的/applications/zookeeper/bin/下启动 zookeeper

```
cd  /applications/zookeeper/bin/
./zkServer.sh start
```

启动成功！

```
[root@sh107 bin]# ./zkServer.sh start
/usr/bin/java
ZooKeeper JMX enabled by default
Using config: /applications/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[root@sh107 bin]#
```

3.测试：

测试集群的效果：

```
cd  /applications/zookeeper/bin/
./zkCli.sh -server 10.101.3.107:2181,10.101.3.108:2181,10.101.3.109:2181
```

集群相应正常（日志中无任何err异常打印）：

```
[root@sh107 bin]# ./zkCli.sh -server 10.101.3.107:2181,10.101.3.108:2181,10.101.3.109:2181
/usr/bin/java
Connecting to 10.101.3.107:2181,10.101.3.108:2181,10.101.3.109:2181
2020-10-12 06:30:11,261 [myid:] - INFO  [main:Environment@109] - Client environment:zookeeper.version=3.5.8-f439ca583e70862c3068a1f2a7d4d068eec33315, built o
n 05/04/2020 15:07 GMT
2020-10-12 06:30:11,264 [myid:] - INFO  [main:Environment@109] - Client environment:host.name=localhost
2020-10-12 06:30:11,264 [myid:] - INFO  [main:Environment@109] - Client environment:java.version=1.8.0_262
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:java.vendor=Oracle Corporation
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:java.home=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.262.b10-0.el7_8.x86_64/jr
e
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:java.class.path=/applications/zookeeper/bin/../zookeeper-server/target/cl
asses:/applications/zookeeper/bin/../build/classes:/applications/zookeeper/bin/../zookeeper-server/target/lib/*.jar:/applications/zookeeper/bin/../build/lib/
*.jar:/applications/zookeeper/bin/../lib/zookeeper-jute-3.5.8.jar:/applications/zookeeper/bin/../lib/zookeeper-3.5.8.jar:/applications/zookeeper/bin/../lib/s
lf4j-log4j12-1.7.25.jar:/applications/zookeeper/bin/../lib/slf4j-api-1.7.25.jar:/applications/zookeeper/bin/../lib/netty-transport-native-unix-common-4.1.48.
Final.jar:/applications/zookeeper/bin/../lib/netty-transport-native-epoll-4.1.48.Final.jar:/applications/zookeeper/bin/../lib/netty-transport-4.1.48.Final.ja
r:/applications/zookeeper/bin/../lib/netty-resolver-4.1.48.Final.jar:/applications/zookeeper/bin/../lib/netty-handler-4.1.48.Final.jar:/applications/zookeepe
r/bin/../lib/netty-common-4.1.48.Final.jar:/applications/zookeeper/bin/../lib/netty-codec-4.1.48.Final.jar:/applications/zookeeper/bin/../lib/netty-buffer-4.
1.48.Final.jar:/applications/zookeeper/bin/../lib/log4j-1.2.17.jar:/applications/zookeeper/bin/../lib/json-simple-1.1.1.jar:/applications/zookeeper/bin/../li
b/jline-2.11.jar:/applications/zookeeper/bin/../lib/jetty-util-9.4.24.v20191120.jar:/applications/zookeeper/bin/../lib/jetty-servlet-9.4.24.v20191120.jar:/ap
plications/zookeeper/bin/../lib/jetty-server-9.4.24.v20191120.jar:/applications/zookeeper/bin/../lib/jetty-security-9.4.24.v20191120.jar:/applications/zookee
per/bin/../lib/jetty-io-9.4.24.v20191120.jar:/applications/zookeeper/bin/../lib/jetty-http-9.4.24.v20191120.jar:/applications/zookeeper/bin/../lib/javax.serv
let-api-3.1.0.jar:/applications/zookeeper/bin/../lib/jackson-databind-2.10.3.jar:/applications/zookeeper/bin/../lib/jackson-core-2.10.3.jar:/applications/zoo
keeper/bin/../lib/jackson-annotations-2.10.3.jar:/applications/zookeeper/bin/../lib/commons-cli-1.2.jar:/applications/zookeeper/bin/../lib/audience-annotatio
ns-0.5.0.jar:/applications/zookeeper/bin/../zookeeper-*.jar:/applications/zookeeper/bin/../zookeeper-server/src/main/resources/lib/*.jar:/applications/zookee
per/bin/../conf:
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:java.library.path=/usr/java/packages/lib/amd64:/usr/lib64:/lib64:/lib:/us
r/lib
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:java.io.tmpdir=/tmp
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:java.compiler=<NA>
2020-10-12 06:30:11,266 [myid:] - INFO  [main:Environment@109] - Client environment:os.name=Linux
2020-10-12 06:30:11,267 [myid:] - INFO  [main:Environment@109] - Client environment:os.arch=amd64
2020-10-12 06:30:11,267 [myid:] - INFO  [main:Environment@109] - Client environment:os.version=3.10.0-1127.19.1.el7.x86_64
2020-10-12 06:30:11,267 [myid:] - INFO  [main:Environment@109] - Client environment:user.name=root
```

查看zk集群的日志

```
./zkServer.sh status
```

集群响应正常：

```
[root@sh107 bin]# ./zkServer.sh status
/usr/bin/java
ZooKeeper JMX enabled by default
Using config: /applications/zookeeper/bin/../conf/zoo.cfg
Client port found: 2181. Client address: localhost.
Mode: follower
```

参考链接

- Zookeeper原理架构：https://www.cnblogs.com/arjenlee/articles/9224366.html