

07-Hbase

笔记本： 模块一配置笔记

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0.软件包

涉及到的软件包，都存放在/opt/soft/

1.前置工作

请参照一前置工作操作

2.解压hbase包

在master中，把hbase-1.4.13-bin.tar.gz解压到指定位置,按照要求是否需要重命名

```
tar -zxvf /opt/soft/hbase-1.4.13-bin.tar.gz -C /opt/soft/
```

重命名 `mv /opt/soft/hbase-1.4.13 /opt/soft/hbase`

3.配置环境变量

在master中，vi /etc/profile

输入：

```
export HBASE_HOME=/opt/soft/hbase
```

```
export PATH=$HBASE_HOME/bin:$PATH
```

```
source /etc/profile 更新环境变量
```

4.修改配置文件

4.1修改hbase-env.sh

```
export HBASE_MANAGES_ZK=true #启用它自带zookeeper
export JAVA_HOME=/opt/soft/jdk #指定JDK
```

4.2修改hbase-site.xml

```
<property>
  <name>hbase.rootdir</name>
  <value>/opt/soft/hbase/data</value>
</property>
<property>
  <name>hbase.cluster.distributed</name>
  <value>false</value>
</property>
```

5.启动HBase

在master，启动hbase的服务。

在master执行 start-hbase.sh后，输入jps查看进程，在进程中有HMaster，证明该服务已启动。

6.使用

进去hbase的客户端

6.1查看hbase数据库状态：

输入：

```
status
```

结果:

```
hbase(main):001:0> status  
2 servers, 0 dead, 1.0000 average load
```

6.2查看Hbase的版本

输入:

```
version
```

结果:

```
hbase(main):002:0> version  
0.98.9-hadoop2, r96878ece501b0643e879254645d7f3a40eaf101f, Mon Dec 15 23  
ST 2014
```

6.3查看hbase数据库中的表

输入:

```
list
```

结果:

```
hbase(main):007:0> list  
TABLE  
0 row(s) in 0.0110 seconds  
=> []
```

6.4创建表成绩表score

输入:

```
create 'score','egrade','course'
```

结果:

```
hbase(main):009:0> create 'score',{NAME=>'egrade',VERSIONS=>5},{NAME=>'course',VERSIONS=>5}
0 row(s) in 1.5360 seconds
=> Hbase::Table - score
```

6.5创建表成绩表score1，然后删除

输入:

```
create 'score1','egrade','course'
```

结果:

```
hbase(main):015:0> create 'score1',{NAME=>'cgrade',VERSIONS=>4},{NAME=>'course',VERSIONS=>2}
0 row(s) in 0.4180 seconds
=> Hbase::Table - score1
```

输入:

```
list
```

结果:

```
hbase(main):016:0> list
TABLE
score
score1
2 row(s) in 0.0240 seconds
=> ["score", "score1"]
```

输入:

```
disable 'score1' #先disable再删除，否则报错
```

结果:

```
hbase(main):017:0> disable 'score1'
0 row(s) in 1.3970 seconds
```

输入:

```
drop 'score1'
```

结果:

```
hbase(main):019:0> drop 'score1'
0 row(s) in 0.4310 seconds
```

输入:

```
list
```

结果:

```
hbase(main):020:0> list
TABLE
score
1 row(s) in 0.0230 seconds
=> ["score"]
```

6.5显示表的相关详细信息

输入:

```
describe 'score'
```

结果:

```
hbase(main):022:0> describe 'score'
Table score is ENABLED
COLUMN FAMILIES DESCRIPTION
{NAME => 'course', DATA_BLOCK_ENCODING => 'NONE', BLOOMFILTER => 'ROW', REPLICAT
ION_SCOPE => '0', VERSIONS => '5', COMPRESSION => 'NONE', MIN_VERSIONS => '0', T
TL => 'FOREVER', KEEP_DELETED_CELLS => 'FALSE', BLOCKSIZE => '65536', IN_MEMORY
=> 'false', BLOCKCACHE => 'true'}
{NAME => 'egrade', DATA_BLOCK_ENCODING => 'NONE', BLOOMFILTER => 'ROW', REPLICAT
ION_SCOPE => '0', VERSIONS => '5', COMPRESSION => 'NONE', MIN_VERSIONS => '0', T
TL => 'FOREVER', KEEP_DELETED_CELLS => 'FALSE', BLOCKSIZE => '65536', IN_MEMORY
=> 'false', BLOCKCACHE => 'true'}
2 row(s) in 9.5230 seconds
```

6.6向score表中添加数据

输入:

```
put 'score', '201101', 'egrade:cet4', '52'
```

结果:

```
hbase(main):011:0> put 'score', '201101', 'egrade:cet4', '52'
0 row(s) in 0.1570 seconds
```

输入:

```
put 'score', '201101', 'egrade:cet4', '62'
put 'score', '201101', 'course:math', '72'
put 'score', '201101', 'course:art', '82'
```

```
put 'score', '201101', 'course:art', '92'
put 'score', '201102', 'egrade:cet4', '83'
put 'score', '201102', 'egrade:cet6', '53'
put 'score', '201102', 'egrade:cet6', '63'
put 'score', '201102', 'egrade:cet6', '73'
put 'score', '201102', 'course:franch', '53'
put 'score', '201102', 'course:phy', '63'
put 'score', '201102', 'course:phy', '73'
put 'score', '201103', 'egrade:cet6', '63'
put 'score', '201104', 'egrade:cet6', '63'
```

6.7扫描表获取相应数据

输入:

```
scan
```

结果:

```
hbase(main):005:0> scan 'score'
ROW                                COLUMN+CELL
201101                             column=course:art, timestamp=1520683633322, value=92
201101                             column=course:math, timestamp=1520683129356, value=72
201101                             column=egrade:cet4, timestamp=1520683104569, value=62
201102                             column=course:franch, timestamp=1520683726930, value=53
201102                             column=course:phy, timestamp=1520683726966, value=63
201102                             column=egrade:cet4, timestamp=1520683726780, value=83
201102                             column=egrade:cet6, timestamp=1520683726915, value=73
201103                             column=egrade:cet6, timestamp=1520683945205, value=63
201104                             column=egrade:cet6, timestamp=1520683946825, value=63
4 row(s) in 0.0330 seconds
```

6.8扫描表获取所有版本数据:

输入:

```
scan 'score', {VERSIONS=>5}
```

结果:

```
hbase(main):006:0> scan 'score',{VERSIONS=>5}
ROW COLUMN+CELL
201101 column=course:art, timestamp=1520683633322, value=92
201101 column=course:art, timestamp=1520683427766, value=82
201101 column=course:math, timestamp=1520683129356, value=72
201101 column=egrade:cet4, timestamp=1520683104569, value=62
201101 column=egrade:cet4, timestamp=1520677481907, value=52
201102 column=course:franch, timestamp=1520683726930, value=53
201102 column=course:phy, timestamp=1520683726966, value=63
201102 column=egrade:cet4, timestamp=1520683726780, value=83
201102 column=egrade:cet6, timestamp=1520683726915, value=73
201102 column=egrade:cet6, timestamp=1520683726882, value=63
201102 column=egrade:cet6, timestamp=1520683726863, value=53
201103 column=egrade:cet6, timestamp=1520683945205, value=63
201104 column=egrade:cet6, timestamp=1520683946825, value=63
4 row(s) in 0.0330 seconds
```

6.9指定列族筛选数据

输入:

```
scan 'score',{COLUMNS=>'egrade',VERSIONS=>5}
```

结果:

```
hbase(main):007:0> scan 'score',{COLUMNS=>'egrade',VERSIONS=>5}
ROW COLUMN+CELL
201101 column=egrade:cet4, timestamp=1520683104569, value=62
201101 column=egrade:cet4, timestamp=1520677481907, value=52
201102 column=egrade:cet4, timestamp=1520683726780, value=83
201102 column=egrade:cet6, timestamp=1520683726915, value=73
201102 column=egrade:cet6, timestamp=1520683726882, value=63
201102 column=egrade:cet6, timestamp=1520683726863, value=53
201103 column=egrade:cet6, timestamp=1520683945205, value=63
201104 column=egrade:cet6, timestamp=1520683946825, value=63
4 row(s) in 0.0190 seconds
```

6.10指定列筛选数据

输入:

```
scan 'score',{COLUMNS=>'egrade:cet4',VERSIONS=>5}
```

结果:

```
hbase(main):008:0> scan 'score',{COLUMNS=>'egrade:cet4',VERSIONS=>5}
ROW COLUMN+CELL
201101 column=egrade:cet4, timestamp=1520683104569, value=62
201101 column=egrade:cet4, timestamp=1520677481907, value=52
201102 column=egrade:cet4, timestamp=1520683726780, value=83
2 row(s) in 0.0250 seconds
```

6.11根据行键筛选数据：

输入：

```
scan 'score',  
COLUMNS=>'egrade', VERSIONS=>5, STARTROW=>'201101', STOPROW=>'201103'}  
#左闭右开
```

结果：

```
hbase(main):009:0> scan 'score',{COLUMNS=>'egrade',VERSIONS=>5,STARTROW=>'201101',STOPROW=>'201103'}  
ROW COLUMN+CELL  
201101 column=egrade:cet4, timestamp=1520683104569, value=62  
201101 column=egrade:cet4, timestamp=1520677481907, value=52  
201102 column=egrade:cet4, timestamp=1520683726780, value=83  
201102 column=egrade:cet6, timestamp=1520683726915, value=73  
201102 column=egrade:cet6, timestamp=1520683726882, value=63  
201102 column=egrade:cet6, timestamp=1520683726863, value=53  
2 row(s) in 0.0280 seconds
```

6.12获取行记录：

输入：

```
get 'score','201102'
```

结果：

```
hbase(main):014:0> get 'score','201102'  
COLUMN CELL  
course:franch timestamp=1520683726930, value=53  
course:phy timestamp=1520683726966, value=63  
egrade:cet4 timestamp=1520683726780, value=83  
egrade:cet6 timestamp=1520683726915, value=73  
4 row(s) in 0.0270 seconds
```

6.13获取行记录指定列族的数据

输入：

```
get 'score','201102','egrade'
```


结果:

```
hbase(main):015:0> get 'score','201102','egrade'
COLUMN                                CELL
egrade:cet4                          timestamp=1520683726780, value=83
egrade:cet6                          timestamp=1520683726915, value=73
2 row(s) in 0.0220 seconds
```

6.14 获取行记录指定列的数据

输入:

```
get 'score','201102','egrade: cet6'
```

结果:

```
hbase(main):017:0> get 'score','201102','egrade:cet6'
COLUMN                                CELL
egrade:cet6                          timestamp=1520683726915, value=73
1 row(s) in 0.0180 seconds
```

6.15 查看表中行的总数(指的是行键数)

输入:

```
count 'score'
```

结果:

```
hbase(main):019:0> count 'score'
4 row(s) in 0.0490 seconds

=> 4
```

6.16 删除指定单元中的值

输入:

```
delete 'score','201102','egrade:cet4'
```

结果:

```
hbase(main):020:0> delete 'score','201102','egrade:cet4'
0 row(s) in 0.0850 seconds
```

6.17删除整行记录

输入:

```
deleteall 'score','201102'
```

结果:

```
hbase(main):022:0> deleteall 'score','201102'
0 row(s) in 0.0190 seconds

hbase(main):023:0> scan 'score'
ROW                                COLUMN+CELL
 201101                            column=course:art, timestamp=1520683633322, value=92
 201101                            column=course:math, timestamp=1520683129356, value=72
 201101                            column=egrade:cet4, timestamp=1520683104569, value=62
 201103                            column=egrade:cet6, timestamp=1520683945205, value=63
 201104                            column=egrade:cet6, timestamp=1520683946825, value=63
3 row(s) in 0.0340 seconds
```

6.18修改列族

输入:

```
alter 'score',{NAME=>'egrade', METHOD=>'delete'} #删除一个列族
```

结果:

```
hbase(main):026:0> alter 'score',{NAME=>'egrade', METHOD=>'delete'}
Updating all regions with the new schema...
0/1 regions updated.
1/1 regions updated.
Done.
0 row(s) in 2.3130 seconds

hbase(main):027:0> scan 'score'
ROW                                COLUMN+CELL
 201101                            column=course:art, timestamp=1520683633322, value=92
 201101                            column=course:math, timestamp=1520683129356, value=72
1 row(s) in 0.0260 seconds
```