**分布式集群电商平台搭建方案**

|  |  |  |
| --- | --- | --- |
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| 注： | 本文档搭建为单机伪分布式集群 |

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# 环境约定

|  |  |  |
| --- | --- | --- |
| ISO | CentOS6.5X64 |  |
| JDK | jdk1.7.0\_80 |  |
| dubbo |  | 提供RPC远程调用 |
| rabitMQ |  | 消息中间件 |
| zookeeper | zookeeper-3.4.9 | dubbo注册中心 |
| redis | redis-3.2.8 |  |
| mysql | mysql-cluster-7.4.13 |  |
| nginx | nginx-1.10.3 | http层面的负载均衡 |
| tomcat | apache-tomcat-8.5.0 |  |

# 目录约定

根目录下创建app目录

[root@localhost /]# mkdir /app



最终目录结构效果

/app

├── base-data

│?? ├── nginx

│?? ├── tomcat-1

│?? └── tomcat-2

├── cms

│?? └── tomcat

├── oms

│?? └── tomcat

├── software

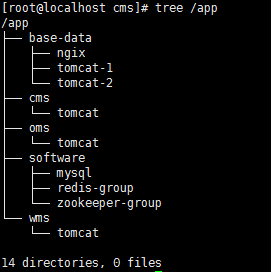
│?? ├── mysql

│?? ├── redis-group

│?? └── zookeeper-group

└── wms

└── tomcat



# Host约定

127.0.0.1 base-data.cluster.com

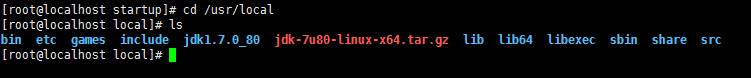
127.0.0.1 oms.cluster.com

127.0.0.1 wms.cluster.com

127.0.0.1 cas.cluster.com

# Java环境搭建

[root@localhost local]# cd /usr/local;tar -zxvf jdk-7u80-linux-x64.tar.gz



[root@localhost local]# cd /etc/profile.d

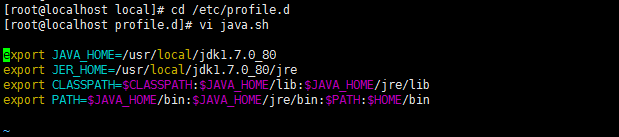
[root@localhost profile.d]# vi java.sh

export JAVA\_HOME=/usr/local/jdk1.7.0\_80

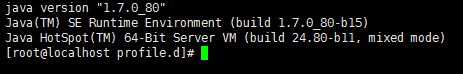
export JER\_HOME=/usr/local/jdk1.7.0\_80/jre

export CLASSPATH=$CLASSPATH:$JAVA\_HOME/lib:$JAVA\_HOME/jre/lib

export PATH=$JAVA\_HOME/bin:$JAVA\_HOME/jre/bin:$PATH:$HOME/bin



[root@localhost profile.d]# java -version



# Zookeeper集群搭建

server.A=B:C:D

A：myid（当前节点ID）

B：主机IP或域名

C：follower与leader通信端口

D：选举leader端口

## 集群参数约定（节点个数5）

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** | **clientPort** | **C** | **D** | **role** |
| 1 | 2181 | 2881 | 3881 |  |
| 2 | 2182 | 2882 | 3882 |  |
| 3 | 2183 | 2883 | 3883 |  |
| 4 | 2184 | 2884 | 3884 | observer |
| 5 | 2185 | 2885 | 3885 | observer |

**节点1-3：**

随机产生一台leader，剩余的两台为follower，leader负责广播follower写请求并发起投票，follower进行投票，票数过半写请求成功

**节点4-5：**

观察者角色，处理读请求，不参与leader投票

## 搭建

[root@localhost zookeeper-group]# wget <http://apache.fayea.com/zookeeper/zookeeper-3.4.9/zookeeper-3.4.9.tar.gz>



[root@localhost zookeeper-group]# tar -zxvf zookeeper-3.4.9.tar.gz



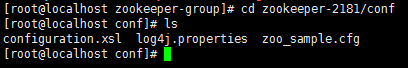
[root@localhost zookeeper-group]# mv zookeeper-3.4.9 zookeeper-2181

[root@localhost zookeeper-group]# ls



[root@localhost zookeeper-group]# cd zookeeper-2181/conf

[root@localhost conf]# ls



[root@localhost conf]# cp zoo\_sample.cfg zoo.cfg

[root@localhost conf]# ls



[root@localhost conf]# vi zoo.cfg



加入如下配置

注意dataDir 默认配置已经存在

dataDir=/app/software/zookeeper-group/zookeeper-2181/data

dataLogDir=/app/software/zookeeper-group/zookeeper-2181/logs

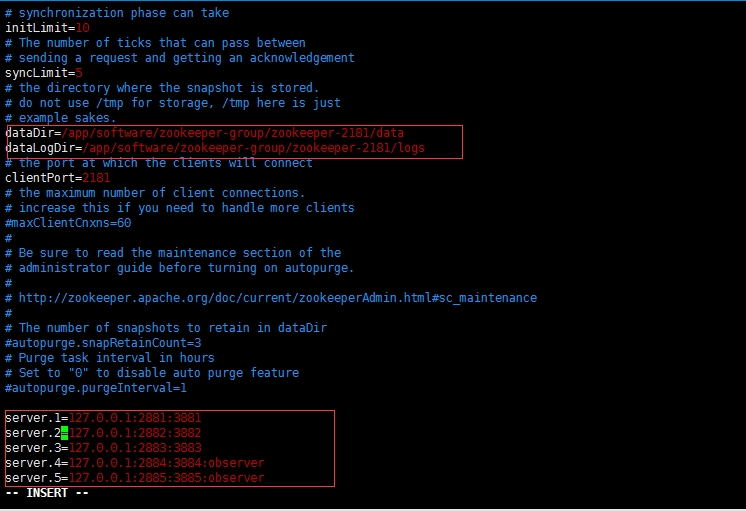
server.1=127.0.0.1:2881:3881

server.2=127.0.0.1:2882:3882

server.3=127.0.0.1:2883:3883

server.4=127.0.0.1:2884:3884:observer

server.5=127.0.0.1:2885:3885:observer



[root@localhost conf]# cd ../;mkdir data logs



[root@localhost zookeeper-2181]# ls -l



[root@localhost zookeeper-2181]# cd ../



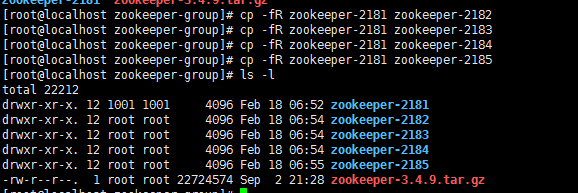
[root@localhost zookeeper-group]# cp -fR zookeeper-2181 zookeeper-2182

[root@localhost zookeeper-group]# cp -fR zookeeper-2181 zookeeper-2183

[root@localhost zookeeper-group]# cp -fR zookeeper-2181 zookeeper-2184

[root@localhost zookeeper-group]# cp -fR zookeeper-2181 zookeeper-2185

[root@localhost zookeeper-group]# ls -l



依次修改各个目录下的zoo.cfg文件

[root@localhost zookeeper-group]# cd zookeeper-2182/conf



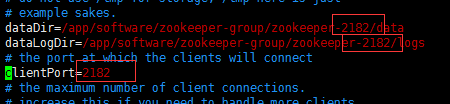
[root@localhost zookeeper-group]# vi zoo.cfg



:%s/2181/2182/g

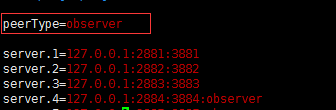






2184和2185为观察者角色

需要添加peerType=observer



[root@localhost zookeeper-group]# cd zookeeper-2181/data/

[root@localhost data]# vi myid





其他4个目录依次创建，分别为2,3,4,5

## 编写zookeeper集群启动脚本

[root@localhost zookeeper-group]# cd /app/startup/



[root@localhost startup]# vi zookeeper.sh



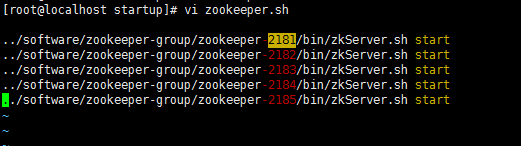
../software/zookeeper-group/zookeeper-2181/bin/zkServer.sh start

../software/zookeeper-group/zookeeper-2182/bin/zkServer.sh start

../software/zookeeper-group/zookeeper-2183/bin/zkServer.sh start

../software/zookeeper-group/zookeeper-2184/bin/zkServer.sh start

../software/zookeeper-group/zookeeper-2185/bin/zkServer.sh start



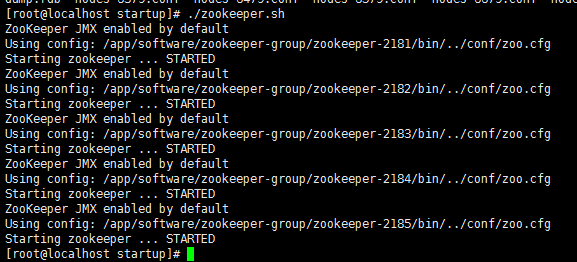
赋予脚本启动权限

[root@localhost startup]# chmod 777 zookeeper.sh

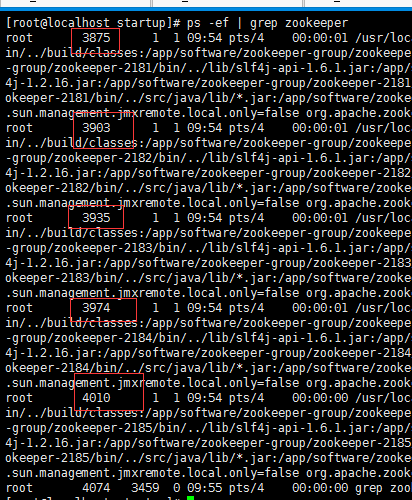




[root@localhost startup]# ./zookeeper.sh



[root@localhost startup]# ps -ef | grep zookeeper



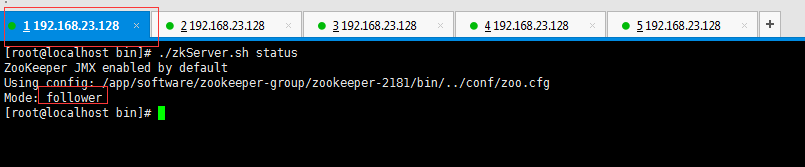
5个zookeeper进程，集群启动成功

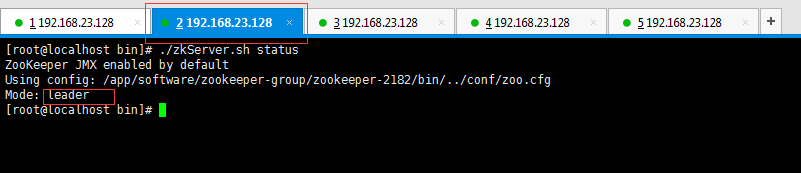
[root@localhost startup]# cd /app/software/zookeeper-group/zookeeper-2181/bin



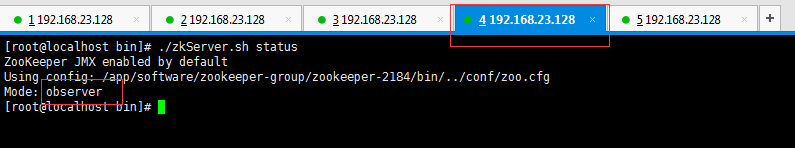


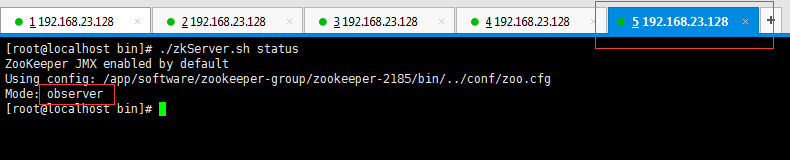
查看集群角色状态，跟设置一样，节点1-3一台leader两台follow，节点4-5observer







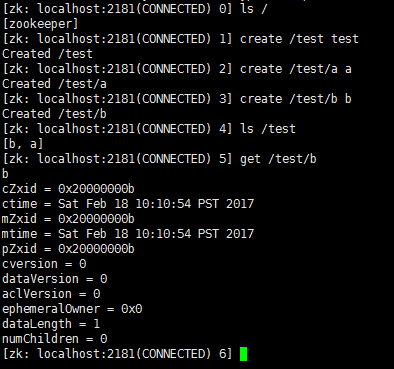




客户端登陆zookeeper

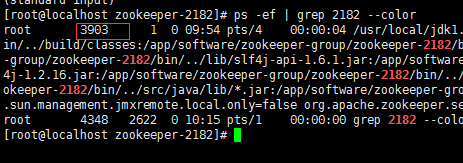


测试



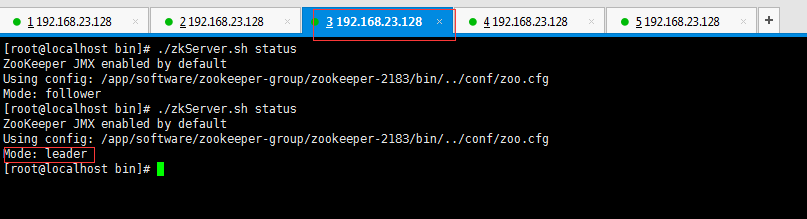
模拟节点宕机，杀死leader

[root@localhost zookeeper-2182]# ps -ef | grep 2182 --color



[root@localhost zookeeper-2182]# kill -9 3903

杀死leader后，节点3选举为leader



# Redis集群搭建

## 集群参数约定（节点个数6，三主每主一从）

|  |  |
| --- | --- |
| **port** | **role** |
| **6379** |  |
| **6479** |  |
| **6579** |  |
| **6679** |  |
| **6779** |  |
| **6879** |  |

## 搭建

### 获取redis包，安装redis

[root@localhost redis-group]# wget <http://download.redis.io/releases/redis-3.2.8.tar.gz>

[root@localhost redis-group]# tar xzf redis-3.2.8.tar.gz



[root@localhost redis-group]# mv redis-3.2.8 redis-6379

[root@localhost redis-group]# ls

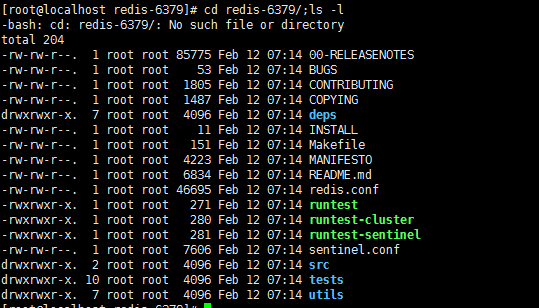


[root@localhost redis-group]# mkdir redis-6479 redis-6579 redis-6679 redis-6779 redis-6879

[root@localhost redis-group]# ls



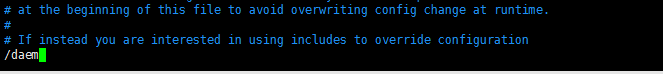
[root@localhost redis-6379]# cd redis-6379/;ls -l



[root@localhost redis-6379]# vi redis.conf

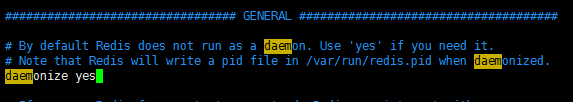


vi 中搜索daem关键字



vi 键盘a

修改daemonize no--> daemonize yes（开启后台启动）

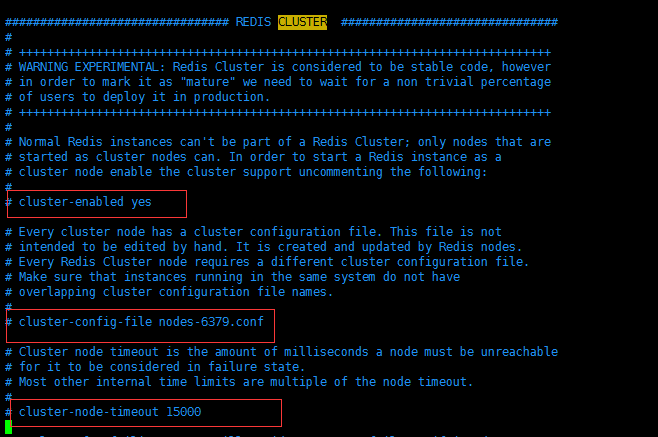


vi 键盘ESC

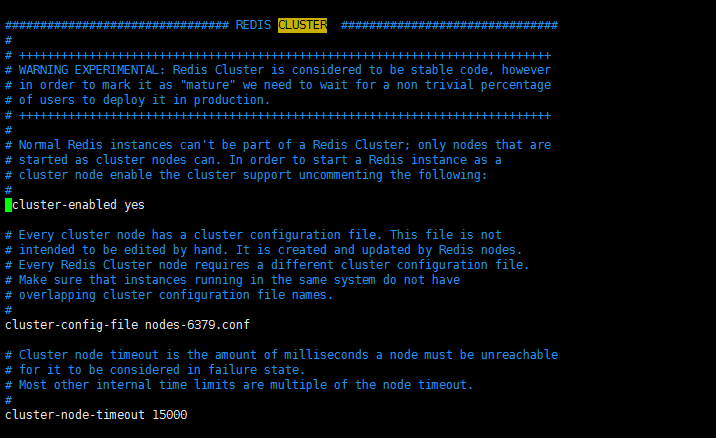
vi 中搜索CLUSTER



vi 键盘a



开启集群模式



vi 键盘ESC

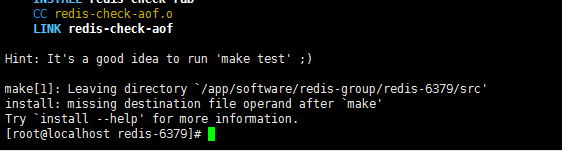
vi 键盘 shift+zz(大写ZZ)保存并退出



[root@localhost redis-6379]# make;install make



安装完成



拷贝配置到另外5个节点

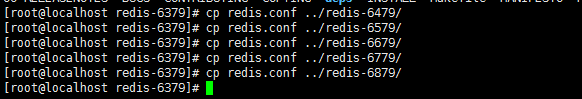
[root@localhost redis-6379]# cp redis.conf ../redis-6479/

[root@localhost redis-6379]# cp redis.conf ../redis-6579/

[root@localhost redis-6379]# cp redis.conf ../redis-6679/

[root@localhost redis-6379]# cp redis.conf ../redis-6779/

[root@localhost redis-6379]# cp redis.conf ../redis-6879/



[root@localhost redis-6379]# tree -L 2 /app/software/redis-group/





[root@localhost redis-6379]# cd ../redis-6479/

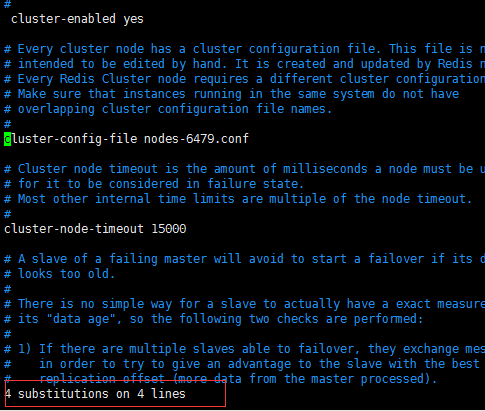
[root@localhost redis-6479]# vi redis.conf



将redis.conf中6379文本替换成6479

:%s/6379/6479/g



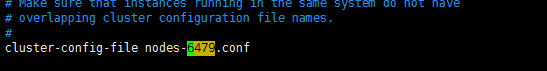


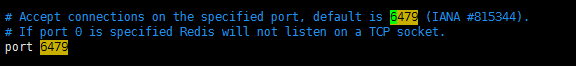
检查是否替换成功

vi 搜索6479



vi 键盘n搜索下一行







同样的方式分别修改以下目录的redis.conf配置，端口为目录端口



### 编写redis集群启动脚本

[root@localhost redis-6879]# cd /app/startup/



[root@localhost startup]# vi redis.sh



../software/redis-group/redis-6379/src/redis-server ../software/redis-group/redis-6379/redis.conf

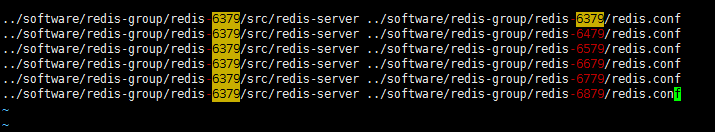
../software/redis-group/redis-6379/src/redis-server ../software/redis-group/redis-6479/redis.conf

../software/redis-group/redis-6379/src/redis-server ../software/redis-group/redis-6579/redis.conf

../software/redis-group/redis-6379/src/redis-server ../software/redis-group/redis-6679/redis.conf

../software/redis-group/redis-6379/src/redis-server ../software/redis-group/redis-6779/redis.conf

../software/redis-group/redis-6379/src/redis-server ../software/redis-group/redis-6879/redis.conf



赋予脚本启动权限

[root@localhost startup]# chmod 777 redis.sh

[root@localhost startup]# ls

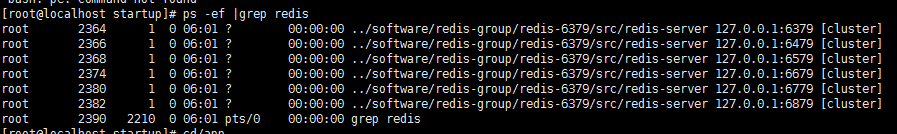


[root@localhost startup]# ./redis.sh

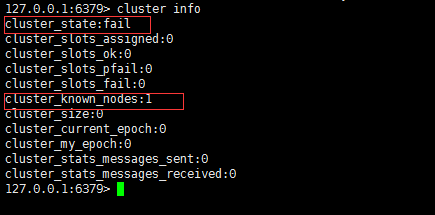


查看redis进程，看集群是否启动成功

[root@localhost startup]# ps -ef| grep redis



此时的redis集群还不可用



### 安装ruby环境（redis-trib.rb工具的相关依赖）

[root@localhost redis-group]# yum -y install ruby

[root@localhost redis-group]# yum -y install rubygems

[root@localhost redis-group]# gem install redis

### 使用redis-trib.rb工具关联集群

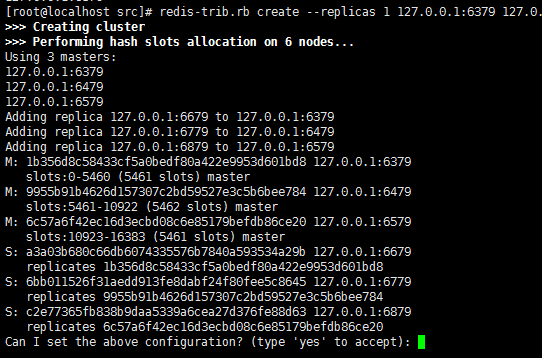
[root@localhost startup]# cd /app/software/redis-group/redis-6379/src



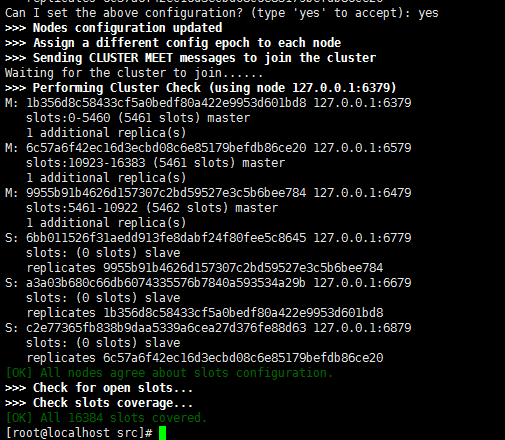
[root@localhost src]# redis-trib.rb create --replicas 1 127.0.0.1:6379 127.0.0.1:6479 127.0.0.1:6579 127.0.0.1:6679 127.0.0.1:6779 127.0.0.1:6879

参数解释：replicas 为每个master创建一个slave





yes



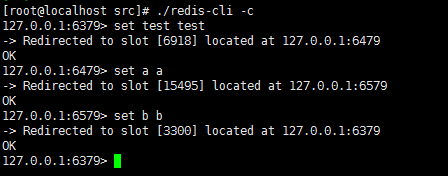
成功！

以集群的方式登陆redis

[root@localhost src]# ./redis-cli -c



测试redis集群



查看集群状态

127.0.0.1:6379> cluster info

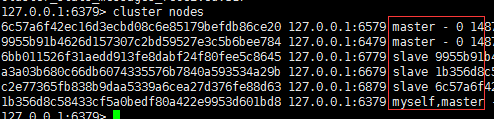
集群状态ok，节点数量6



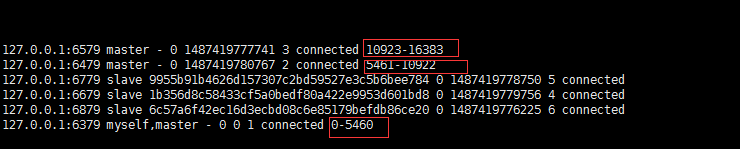
查看集群节点

127.0.0.1:6379> cluster nodes

三主，三从



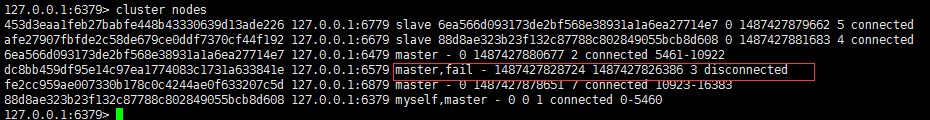
Slot的分配



模拟节点宕机，杀死master

例如本文档杀死端口为6579的master进程

kill -9 进程id



变化：原master的slave变master

保证3个master不宕机，集群正常使用，也就是说本集群允许最多挂掉3个节点

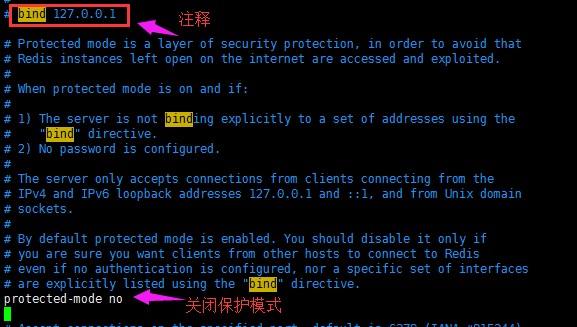
## 配置外部访问

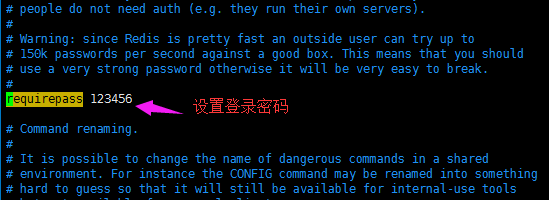
### 修改redis.conf文件

[root@localhost ~]# cd /app/software/redis-group/redis-6379/

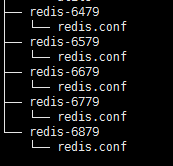
[root@localhost redis-6379]# vi redis.conf







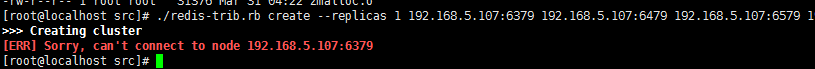
同样的方式修改其余的5个配置文件



### 修改redis-trib.rb工具源码，增加redis登录验证

因为之前使用redis-trib.rb关联集群时使用的是127.0.0.1的ip地址，这样会导致项目无法连接上集群的情况，所以需要使用192的ip重新关联集群

[root@localhost src]# ./redis-trib.rb create --replicas 1 192.168.5.107:6379 192.168.5.107:6479 192.168.5.107:6579 192.168.5.107:6679 192.168.5.107:6779 192.168.5.107:6879

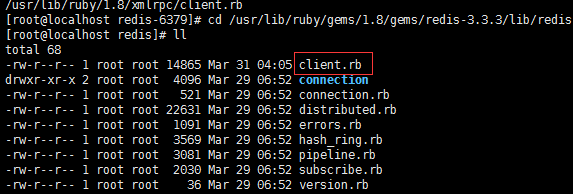


redis-trib.rb工具不支持密码参数,在配置了redis密码的情况下，工具无法使用，需要修改工具源码，加入redis登录验证密码

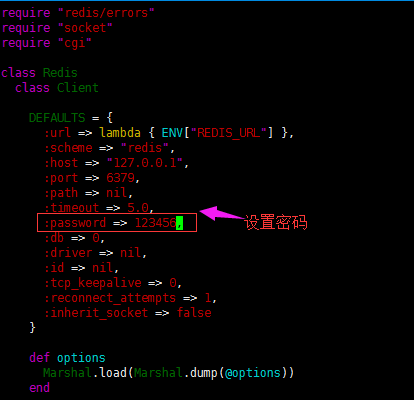
[root@localhost redis-6379]# find / -name client.rb



[root@localhost redis-6379]# cd /usr/lib/ruby/gems/1.8/gems/redis-3.3.3/lib/redis

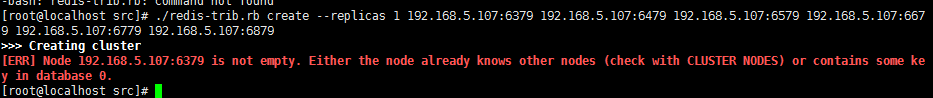


[root@localhost redis]# vi client.rb



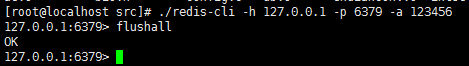
### 重新关联集群

再次执行



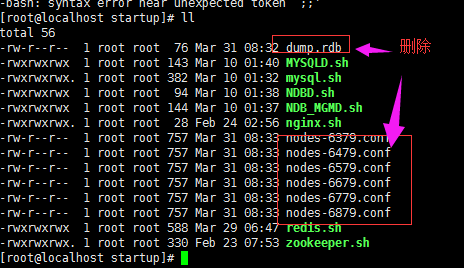
发现节点不为空，需要先清空redis节点数据

[root@localhost src]# ./redis-cli -h 127.0.0.1 -p 6379 -a 123456



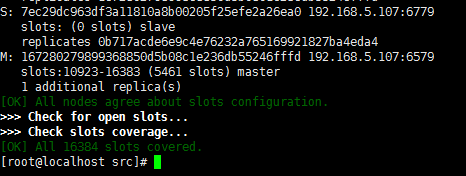
同样的方式清空剩余2个master的数据

删除redis cluster节点文件，或者用redis-trib.rb工具删除集群关联



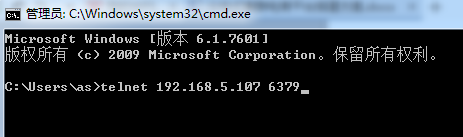
重新关联

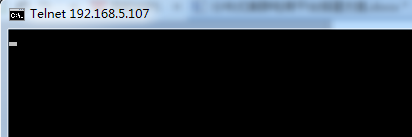
[root@localhost src]# ./redis-trib.rb create --replicas 1 192.168.5.107:6379 192.168.5.107:6479 192.168.5.107:6579 192.168.5.107:6679 192.168.5.107:6779 192.168.5.107:6879



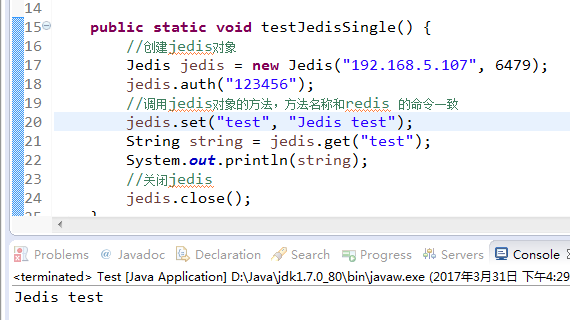
## 在连接单个节点正常的情况下，连接集群时却出现拒绝连接的坑

Telnet正常





Jedis连接集群单个节点正常



但JedisCluster连接集群时却拒绝连接

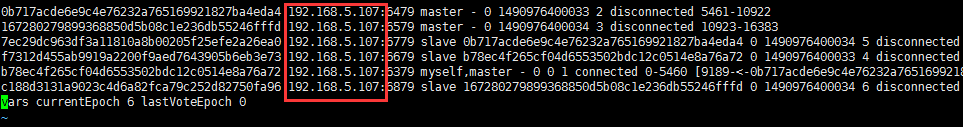


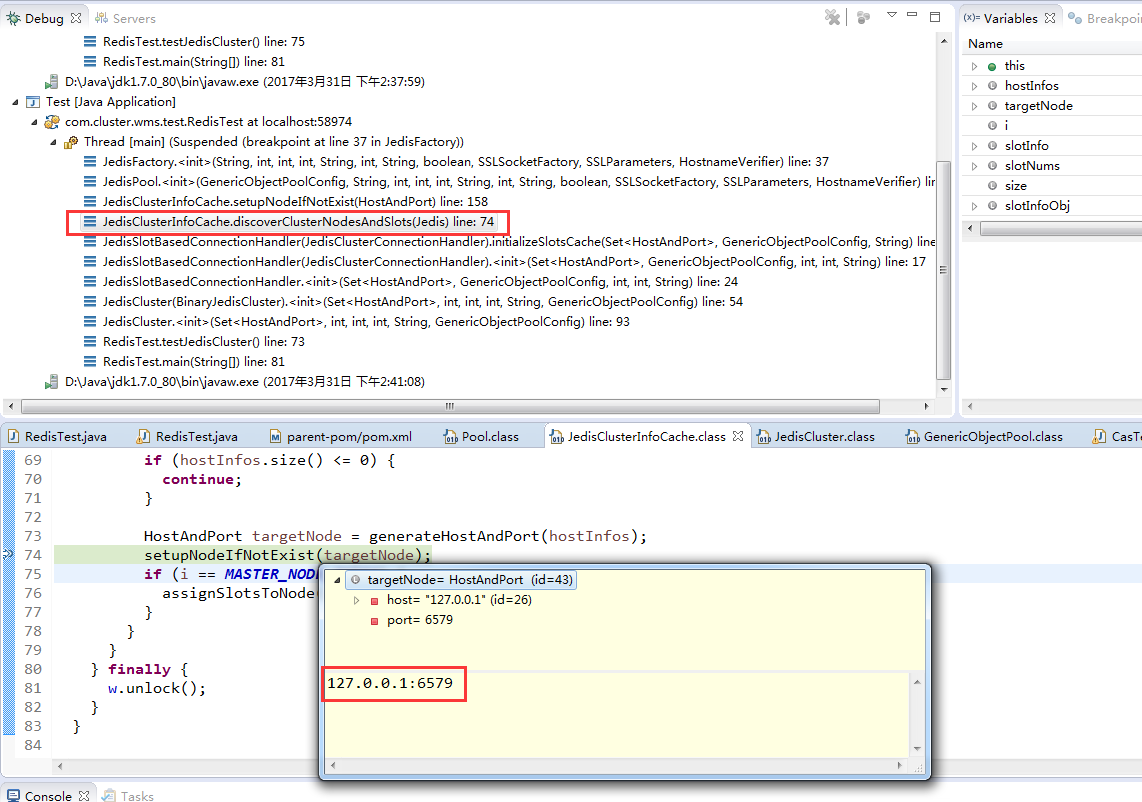
调试源码发现jedis工厂创建jedis实例时，传入的host参数居然变成127.0.0.1了，

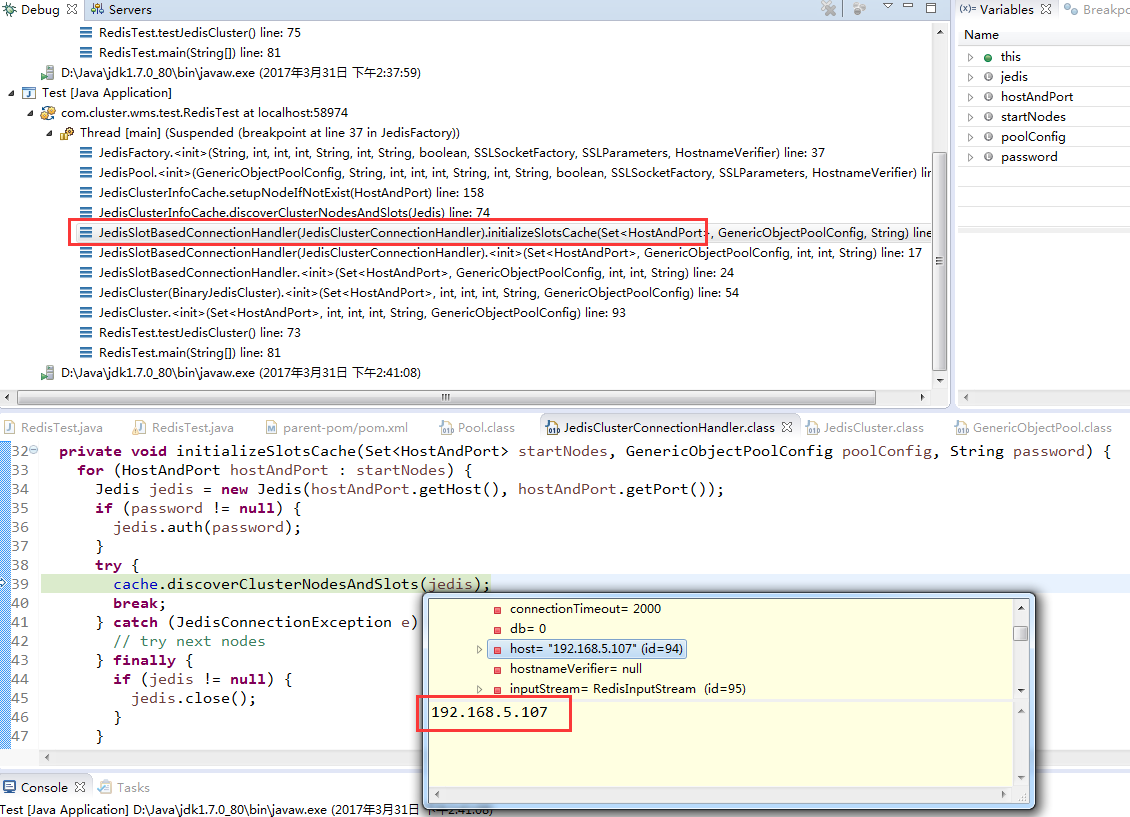


追溯后发现jedis工厂创建jedis实例时传入的host并不是我们传入的host，而是

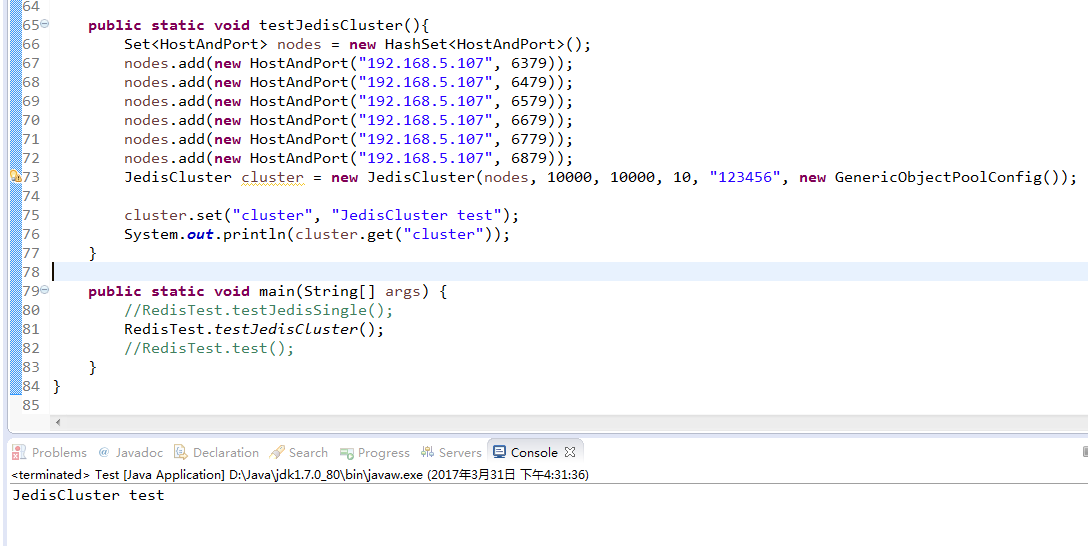
JedisClusterInfoCache类获取集群节点中的host传入的，也就是说在关联集群时需要使用192的ip，不能使用127







最后测试正常



# Rabbitmq集群搭建

## 集群参数约定

## 搭建

### 安装erlang依赖

[root@bogon rabbitmq-group]# wget <http://www.rabbitmq.com/releases/erlang/erlang-18.1-1.el6.x86_64.rpm>



[root@bogon rabbitmq-group]# rpm -ivh erlang-18.1-1.el6.x86\_64.rpm



### 安装socat依赖

wget ?no-cache http://www.convirture.com/repos/definitionsrhel/6.x/convirt.repo -O /etc/yum.repos.d/convirt.repo



[root@bogon rabbitmq-group]# yum install socat



### 获取rabbitmq包，安装

[root@bogon rabbitmq-group]#

wget http://www.rabbitmq.com/releases/rabbitmq-server/v3.6.6/rabbitmq-server-3.6.6-1.el6.noarch.rpm



[root@bogon rabbitmq-group]# rpm -ivh rabbitmq-server-3.6.6-1.el6.noarch.rpm



# Tomcat参数约定

|  |  |  |  |
| --- | --- | --- | --- |
| **Server name** | **Tomcat port** | **HTTP/1.1 port** | **AJP/1.3 port** |
| base-data-web-8010 | 8001 | 8010 | 8100 |
| base-data-web-8020 | 8002 | 8020 | 8200 |
| oms-web-8040 | 8004 | 8040 | 8400 |
| wms-web-8050 | 8005 | 8050 | 8500 |
| cas-server-8060 | 8006 | 8060 | 8600 |

## 获取tomcat包，配置tomcat

[root@localhost /]# cd /app/tomcat/



[root@localhost tomcat]# wget http://archive.apache.org/dist/tomcat/tomcat-8/v8.5.0/bin/apache-tomcat-8.5.0.tar.gz





[root@localhost tomcat]# tar -zxvf apache-tomcat-8.5.0.tar.gz



[root@localhost tomcat]# mv apache-tomcat-8.5.0 base-data-web-8010

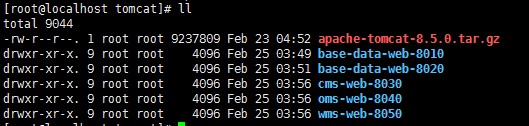


[root@localhost tomcat]# cp -fR base-data-web-8010/ base-data-web-8020/

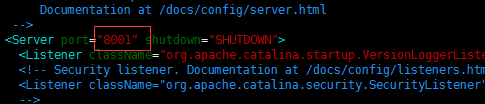
[root@localhost tomcat]# cp -fR base-data-web-8010/ cms-web-8030/

[root@localhost tomcat]# cp -fR base-data-web-8010/ oms-web-8040/

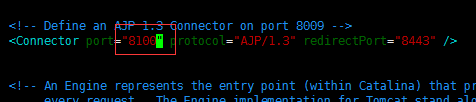
[root@localhost tomcat]# cp -fR base-data-web-8010/ wms-web-8050/



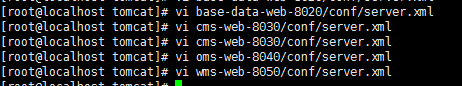
[root@localhost tomcat]# vi base-data-web-8010/conf/server.xml







分别编辑剩余五个，端口参数见上表



## 编写tomcat启动脚本

[root@localhost tomcat]# cd /app/startup/



[root@localhost startup]# vi tomcat.sh



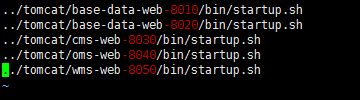
../tomcat/base-data-web-8010/bin/startup.sh

../tomcat/base-data-web-8020/bin/startup.sh

../tomcat/cms-web-8030/bin/startup.sh

../tomcat/oms-web-8040/bin/startup.sh

../tomcat/wms-web-8050/bin/startup.sh



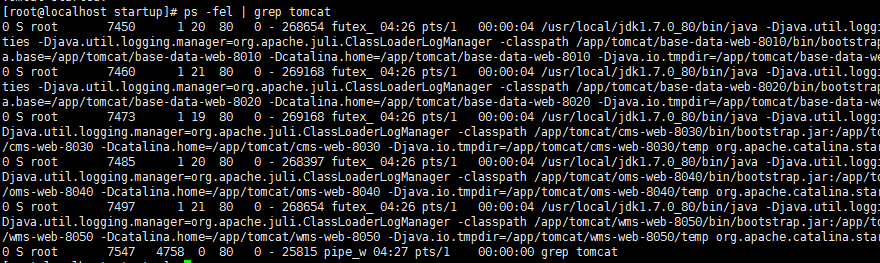
[root@localhost startup]# chmod 777 tomcat.sh







[root@localhost startup]# ps -fel | grep tomcat



启动成功！

# Nginx安装

## 获取nginx包，安装nginx

[root@bogon nginx]# wget <http://nginx.org/download/nginx-1.10.3.tar.gz>





[root@bogon nginx]# tar -zxvf nginx-1.10.3.tar.gz



[root@localhost nginx]# mkdir base-data-80





[root@localhost nginx]# cd nginx-1.10.3



[root@localhost nginx-1.10.3]# yum -y install pcre-devel



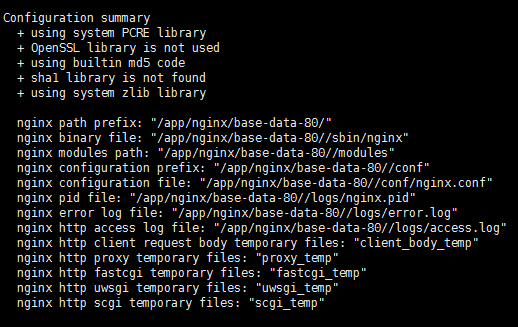
[root@localhost nginx-1.10.3]# yum -y install zlib-devel



[root@localhost nginx-1.10.3]# ./configure --prefix=/app/nginx/base-data-80/

（可用--prefix=path指定安装目录，默认  /usr/local/nginx）





[root@localhost nginx-1.10.3]# make ;make install

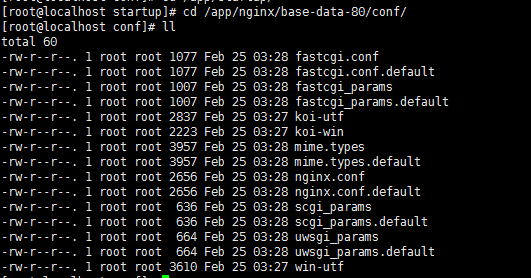




安装成功！

## 配置base-data项目的负载均衡

[root@localhost startup]# cd /app/nginx/base-data-80/conf/



[root@localhost conf]# vi nginx.conf



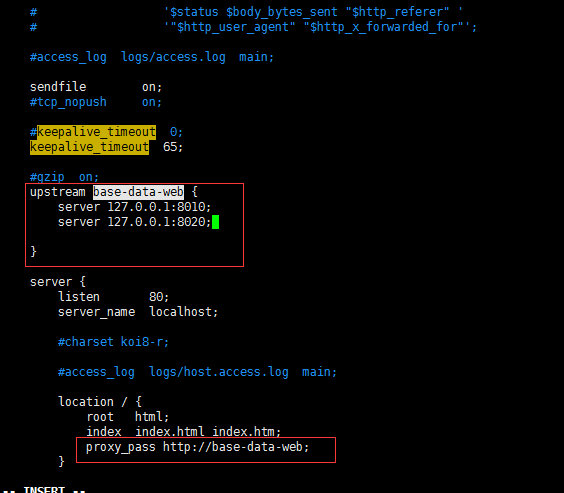
upstream base-data-web {

server 127.0.0.1:8010;

server 127.0.0.1:8020;

}

proxy\_pass http://base-data-web;



## 编写nginx启动脚本

[root@localhost nginx-1.10.3]# cd /app/startup/



[root@bogon startup]# vi nginx.sh



/app/nginx/base-data-80/sbin/nginx



[root@bogon startup]# chmod 777 nginx

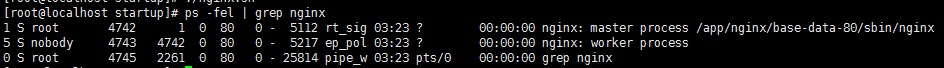




[root@bogon startup]# ./nginx.sh



[root@localhost startup]# ps -fel | grep nginx



测试，为了看清nginx具体将请求转发到哪个服务器，在base-data-web-8010和base-data-web-8020的index.jsp加入标识

[root@localhost ROOT]# vi /app/tomcat/base-data-web-8010/webapps/ROOT/index.jsp

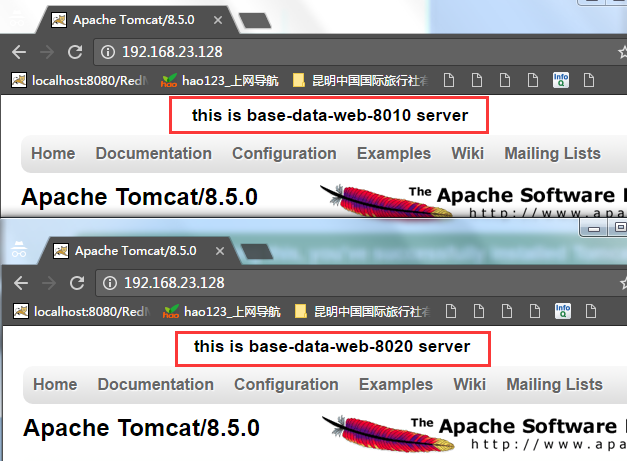
[root@localhost ROOT]# vi /app/tomcat/base-data-web-8020/webapps/ROOT/index.jsp





两次访问，发现，每次访问的tomcat服务器都不一致

（如果出现127.0.0.1可以访问，外部无法访问的情况，请关闭虚拟机防火墙，关闭方法参照附录）



# Dubbo控制台

# Mysql集群搭建

## 集群参数约定

|  |  |  |
| --- | --- | --- |
|  | **port** | **role** |
| NDB\_MGMD |  | 管理节点 |
| NDBD-1 |  | 数据节点-1 |
| NDBD-2 |  | 数据节点-2 |
| MYSQLD-8001 | 8001 | Sql节点-2 |
| MYSQLD-8002 | 8002 | Sql节点-2 |

## 查看系统默认安装版本，卸载

CentOS6.5X64默认安装了mysql服务，查看系统自带的mysql服务版本，并卸载

查看服务

[root@localhost /]# rpm -qa|grep mysql



卸载服务

[root@localhost /]# rpm -e mysql-libs --nodeps



## 搭建

### 安装mysql

[root@localhost mysql-group]# wget https://cdn.mysql.com/archives/mysql-cluster-gpl-7.4/mysql-cluster-gpl-7.4.13-linux-glibc2.5-x86\_64.tar.gz





[root@bogon mysql-group]# tar -zxvf mysql-cluster-gpl-7.4.13-linux-glibc2.5-x86\_64.tar.gz





[root@bogon mysql-group]# mv mysql-cluster-gpl-7.4.13-linux-glibc2.5-x86\_64 MYSQLD-8001



[root@bogon mysql-group]# cd MYSQLD-8001



[root@bogon MYSQLD-8001]# groupadd mysql

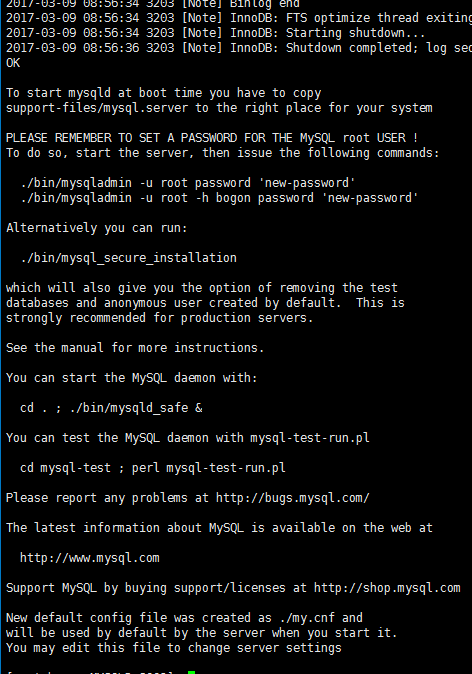


[root@bogon MYSQLD-8001]# useradd -g mysql mysql



[root@bogon MYSQLD-8001]# scripts/mysql\_install\_db --user=mysql





安装成功！



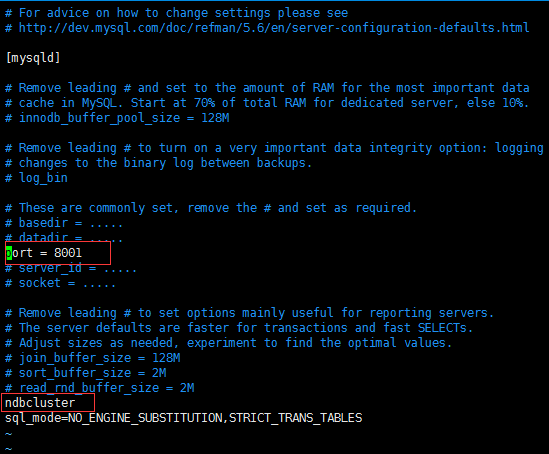
### 配置sql节点

[root@bogon MYSQLD-8001]# vi my.cnf



port = 8001 修改端口

ndbcluster 开启集群模式



[root@bogon MYSQLD-8001]# cd support-files/



[root@bogon support-files]# vi mysql.server



basedir=/app/software/mysql-group/MYSQLD-8001/

datadir=/app/software/mysql-group/MYSQLD-8001/data/



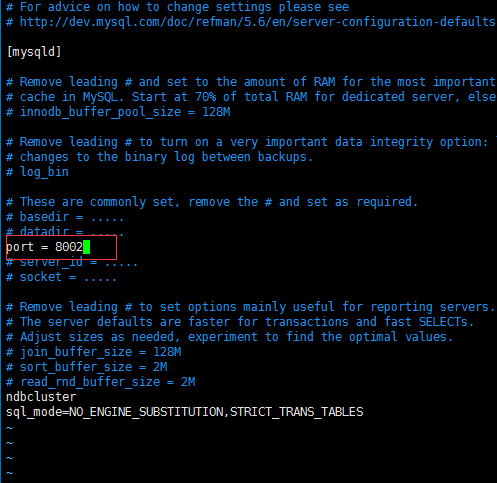
重复上面步骤 安装MYSQLD-8002

修改配置

port = 8001

basedir=/app/software/mysql-group/MYSQLD-8002/

datadir=/app/software/mysql-group/MYSQLD-8002/data/





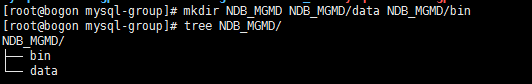
[root@bogon mysql-group]# ls MYSQLD-800\* -d



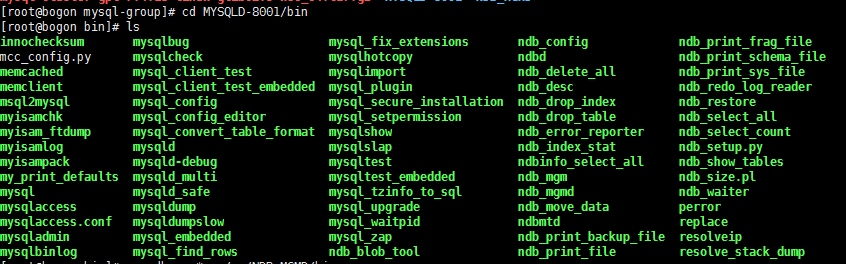
### 安装管理节点

mysql-group目录创建如下目录结构

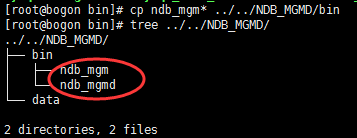
[root@bogon mysql-group]# mkdir NDB\_MGMD NDB\_MGMD/data NDB\_MGMD/bin



[root@bogon mysql-group]# cd MYSQLD-8001/bin



[root@bogon bin]# cp ndb\_mgm\* ../../NDB\_MGMD/bin



[root@bogon bin]# cd ../../NDB\_MGMD/



编写config.ini 配置

[NDBD DEFAULT]

NoOfReplicas=1

[NDB\_MGMD]

#设置管理节点服务器

HostName=127.0.0.1

DataDir=/app/software/mysql-group/NDB\_MGMD/data

[NDBD]

#设置存储节点服务器 节点1

HostName=127.0.0.1

DataDir=/app/software/mysql-group/NDBD-1

[NDBD]

#设置存储节点服务器 节点2

HostName=127.0.0.1

DataDir=/app/software/mysql-group/NDBD-2

[MYSQLD]

#设置SQL节点服务器 节点1

HostName=127.0.0.1

[MYSQLD]

#设置SQL节点服务器 节点2

HostName=127.0.0.1





### 编写启动脚本

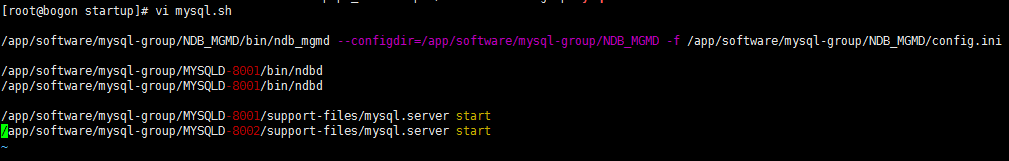
/app/software/mysql-group/NDB\_MGMD/bin/ndb\_mgmd --configdir=/app/software/mysql-group/NDB\_MGMD -f /app/software/mysql-group/NDB\_MGMD/config.ini

/app/software/mysql-group/MYSQLD-8001/bin/ndbd

/app/software/mysql-group/MYSQLD-8001/bin/ndbd

/app/software/mysql-group/MYSQLD-8001/support-files/mysql.server start

/app/software/mysql-group/MYSQLD-8002/support-files/mysql.server start



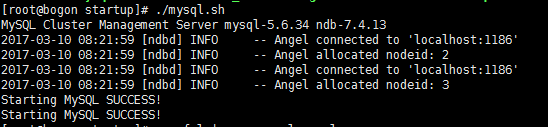


[root@bogon startup]# ./mysql.sh



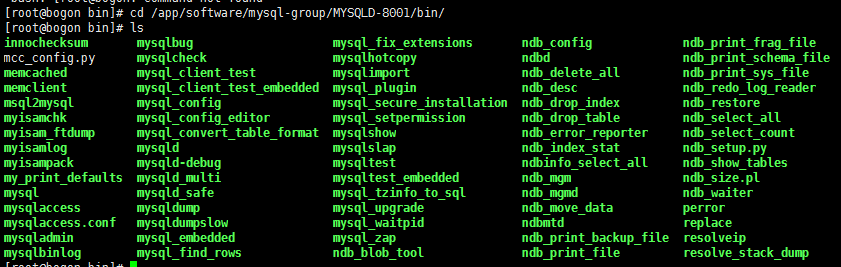
查询管理节点进程

[root@bogon startup]# ps -fel | grep mysql --color



### 登录mysql终端

[root@bogon bin]# cd /app/software/mysql-group/MYSQLD-8001/bin/

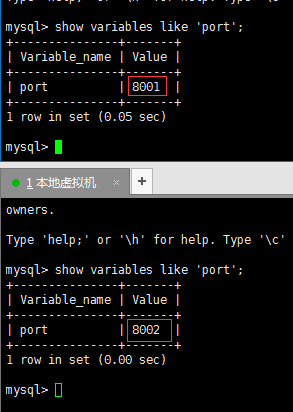


[root@bogon bin]# ./mysql -h 127.0.0.1 -P 8001 -u root

[root@bogon bin]# ./mysql -h 127.0.0.1 -P 8002 -u root

查看当前mysql端口号，检查是否登录不同的终端

mysql> show variables like 'port';

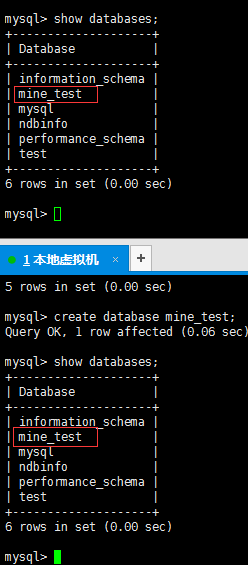


### 数据同步测试

以下命令只在一个终端执行

创建数据库 mine\_test

create database mine\_test;



创建表

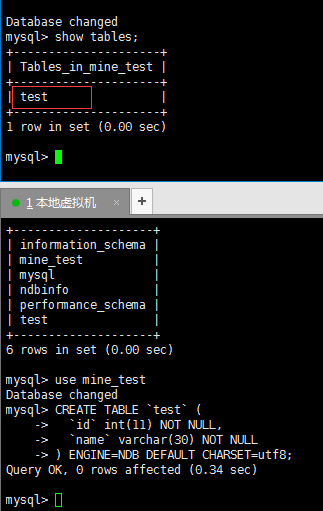
必须指定表引擎为NDB

CREATE TABLE `test` (

`id` int(11) NOT NULL,

`name` varchar(30) NOT NULL

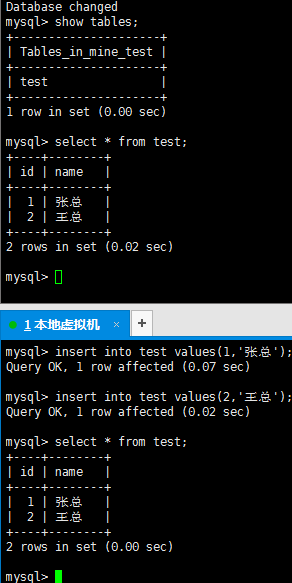
) ENGINE=NDB DEFAULT CHARSET=utf8;



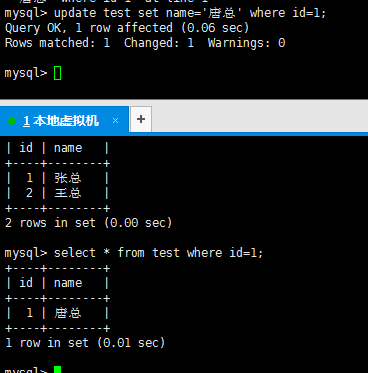
插入测试数据

insert into test values(1,'张总');

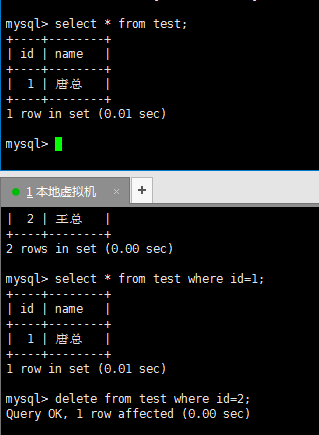
insert into test values(2,'王总');



修改测试数据

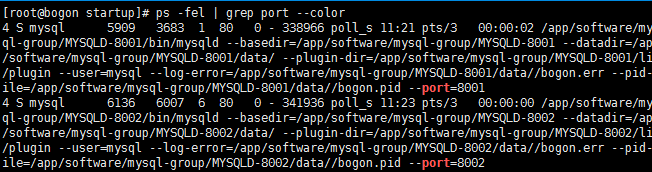


删除测试数据



### 模拟节点宕机

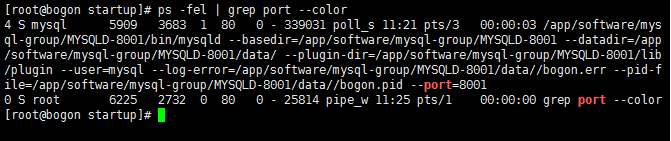
[root@bogon startup]# ps -fel | grep port --color

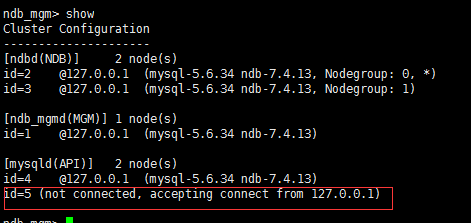


停止8002端口数据节点

[root@bogon support-files]# ./mysql.server stop







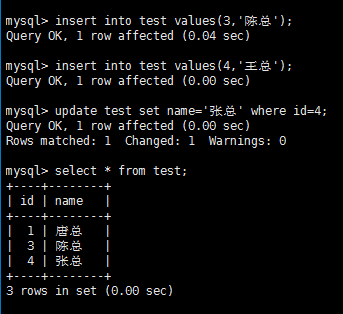
8002数据节点已关闭

### 宕机后数据同步测试

insert into test values(3,'陈总');

insert into test values(4,'王总');

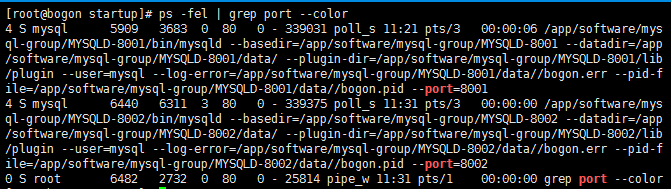
update test set name='张总' where id=4;

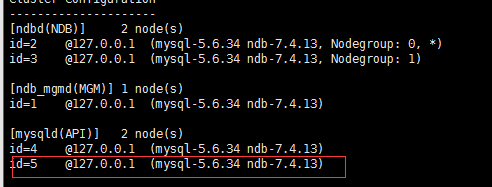


开启8002端口数据节点

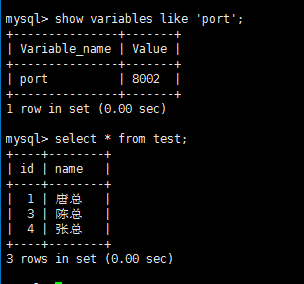
[root@bogon support-files]# ./mysql.server start







登录终端，查看数据，已经同步过来



### 配置mysql远程访问

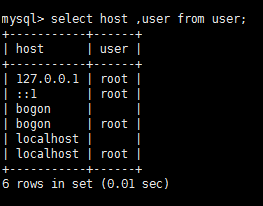


直接修改root用户用于远程访问

切换mysql数据库

mysql> use mysql;

mysql> select host ,user from user;



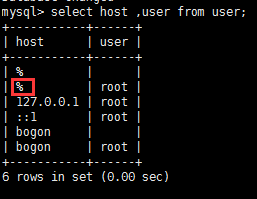
%代表任何ip都可以访问

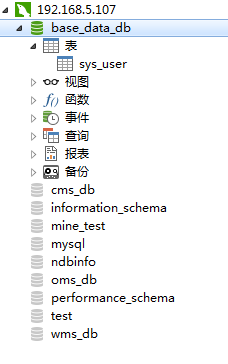
mysql> update user set host='%' where host='localhost';

刷新权限

mysql> FLUSH PRIVILEGES ;

mysql> select host ,user from user;





# Cas服务器配置（基础配置）

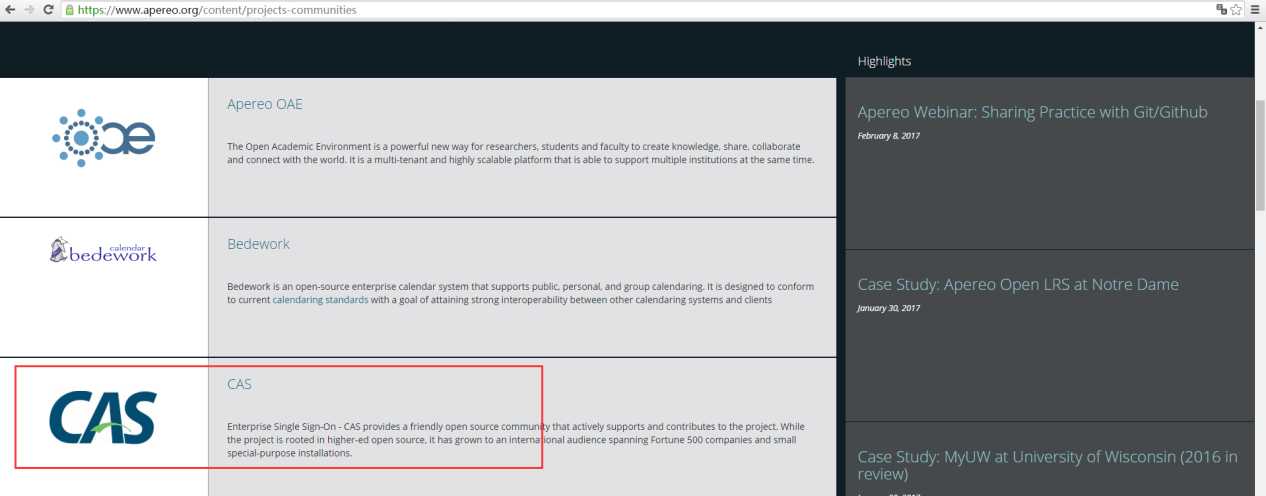
## 获取cas包（cas-server-4.0.0）

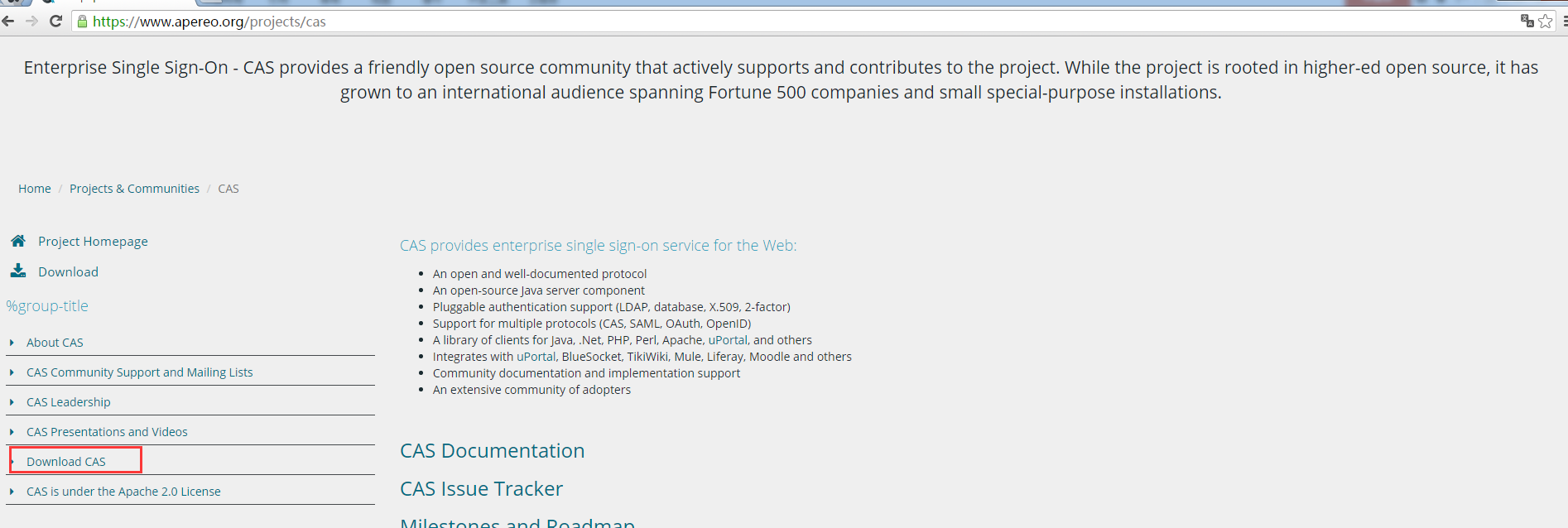
https://github-cloud.s3.amazonaws.com/releases/2352744/3dbe1b3a-8863-11e4-9274-f93d7d695c3f.zip?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAISTNZFOVBIJMK3TQ%2F20170320%2Fus-east-1%2Fs3%2Faws4\_request&X-Amz-Date=20170320T022906Z&X-Amz-Expires=300&X-Amz-Signature=2e6ad530b2cf1f2378beaf0a4d692b184746ad85e81a638d89dd20ca6331d708&X-Amz-SignedHeaders=host&actor\_id=0&response-content-disposition=attachment%3B%20filename%3Dcas-server-4.0.0-release.zip&response-content-type=application%2Foctet-stream

## 从Cas官网下载cas包流程

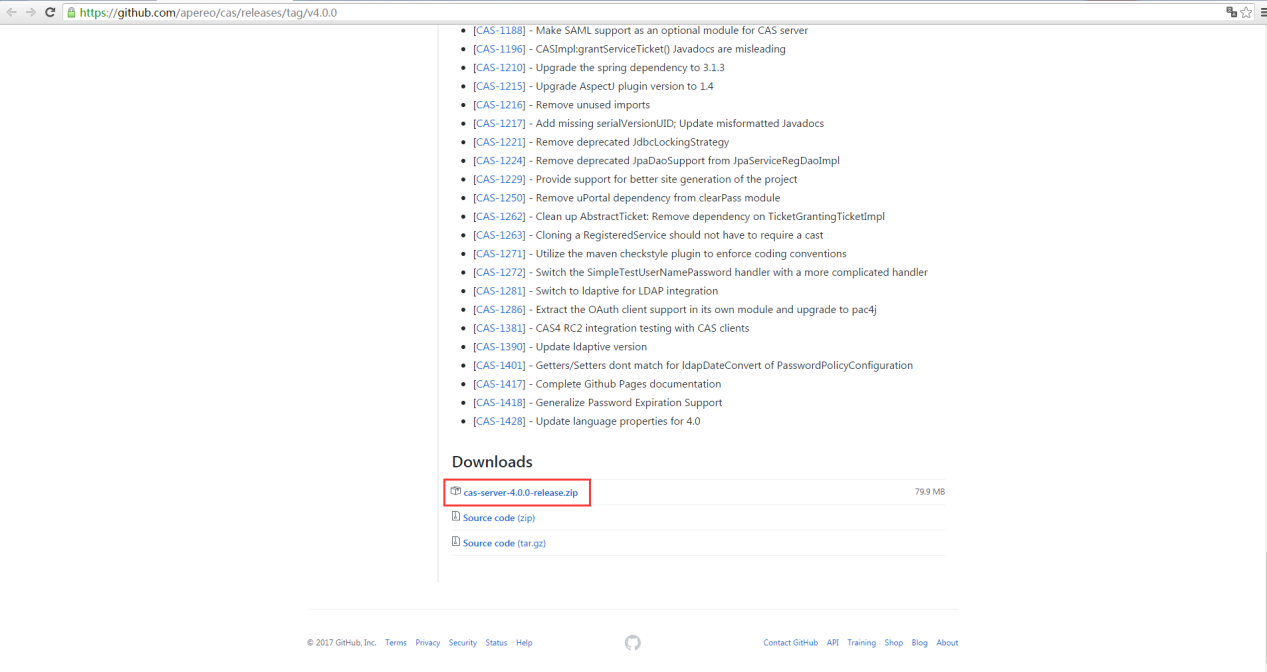
<https://www.apereo.org/>







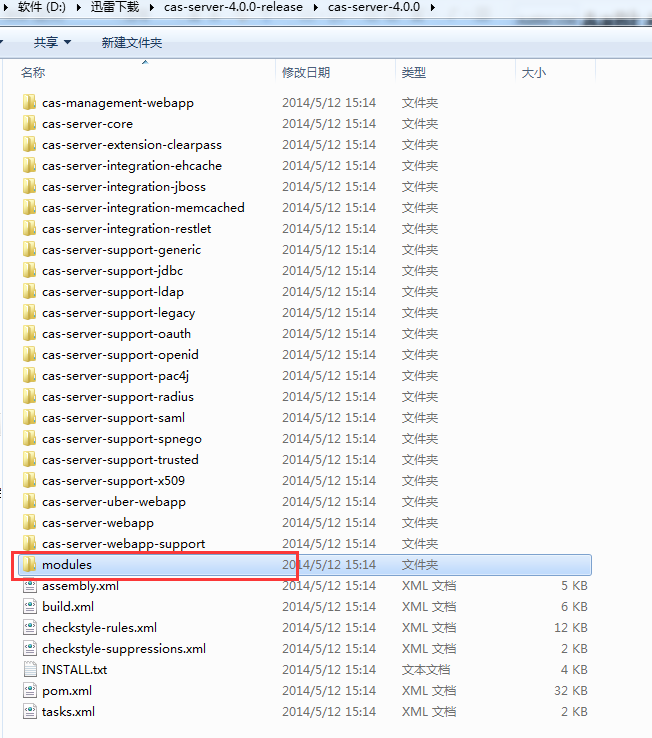


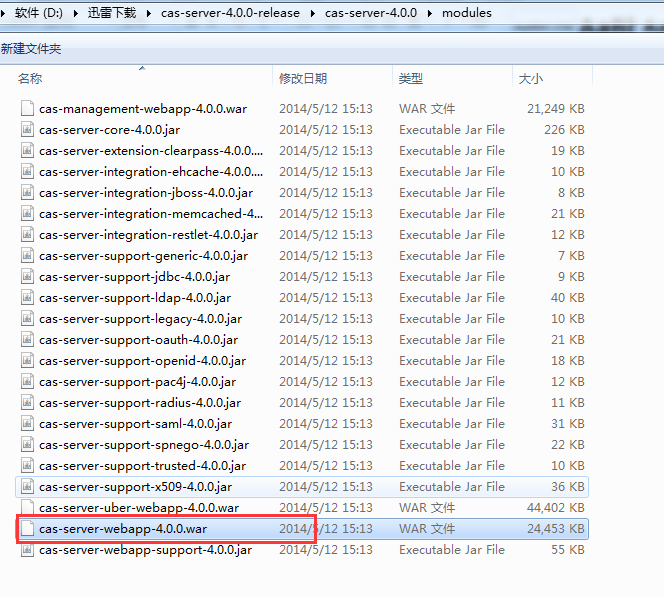


上传cas-server-webapp-4.0.0.war到cas-server-8060服务器



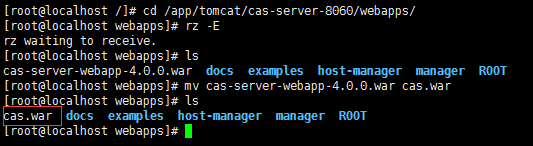
解压





[root@localhost /]# cd /app/tomcat/cas-server-8060/webapps/

[root@localhost webapps]# mv cas-server-webapp-4.0.0.war cas.war



## 配置Tomcat 服务器https连接方式

因为caas采用的是https协议，需要将tomcat默认的http连接方式改成https

[root@localhost conf]# vi /app/tomcat/cas-server-8060/conf/server.xml



<Connector

protocol="org.apache.coyote.http11.Http11NioProtocol"

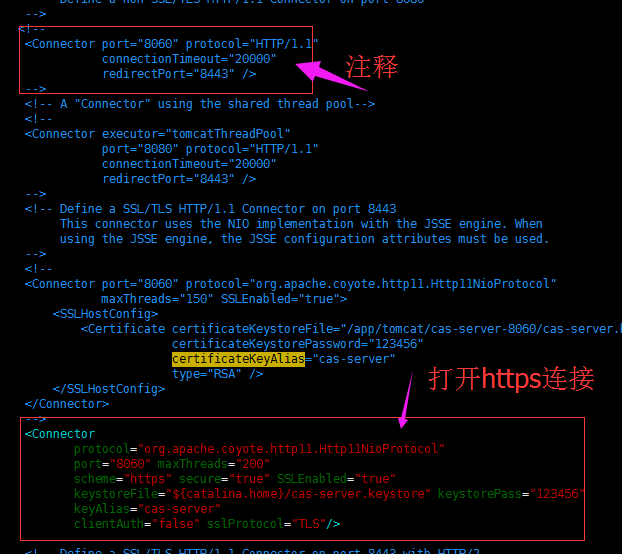
port="8060" maxThreads="200"

scheme="https" secure="true" SSLEnabled="true"

keystoreFile="${catalina.home}/cas-server.keystore" keystorePass="123456"

keyAlias="cas-server"

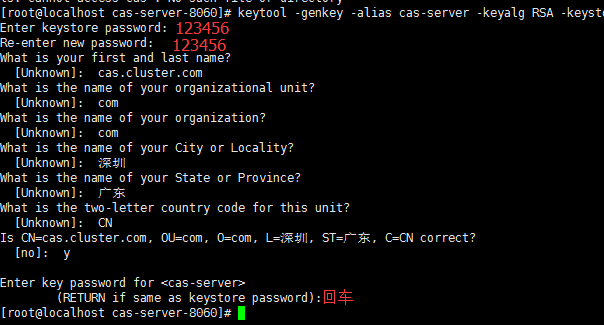
clientAuth="false" sslProtocol="TLS"/>



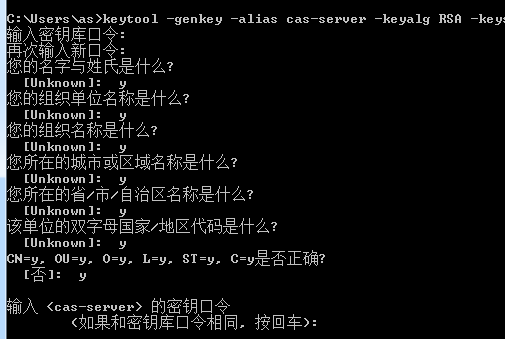
## 使用jdk的[keytool工具生成https证书](http://blog.csdn.net/huangxinyu_it/article/details/41693633)

[root@localhost cas-server-8060]# keytool -genkey -alias cas-server -keyalg RSA -keystore /app/tomcat/cas-server-8060/cas-server.keystore

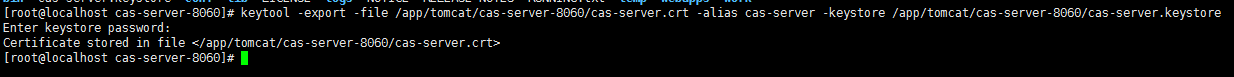




Window下，中文版



[root@localhost cas-server-8060]# keytool -export -file /app/tomcat/cas-server-8060/cas-server.crt -alias cas-server -keystore /app/tomcat/cas-server-8060/cas-server.keystore





导入证书到jvm

**（注：密码为changeit**

**这步的作用还不明确，不论证书导没导入jvm都会出现连接不是私密连接）**



[root@localhost security]# keytool -import -keystore /usr/local/jdk1.7.0\_80/jre/lib/security/cacerts -file /app/tomcat/cas-server-8060/cas-server.crt -alias cas-server



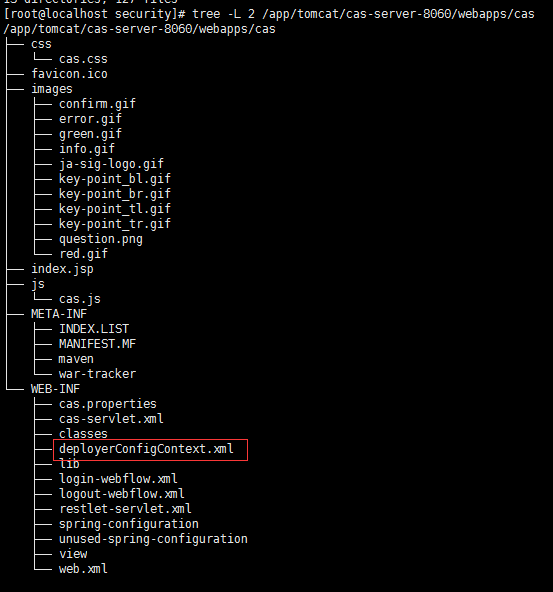
删除证书

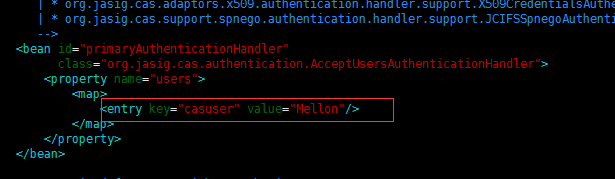
[root@localhost security]# keytool -delete -alias cas-server -keystore /usr/local/jdk1.7.0\_80/jre/lib/security/cacerts -storepass changeit

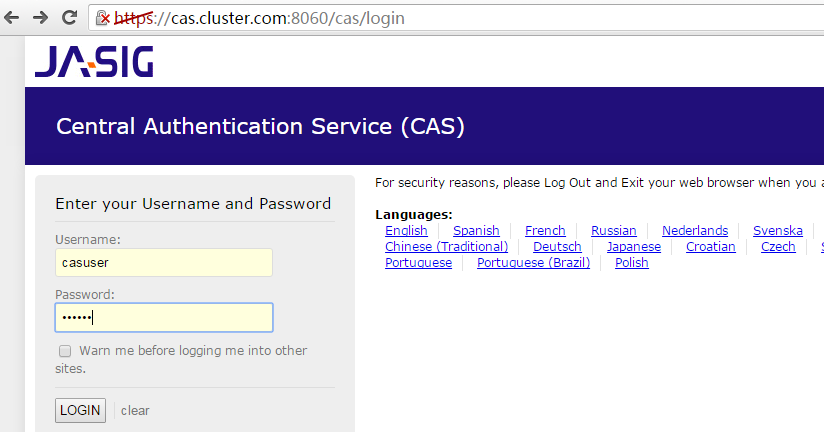


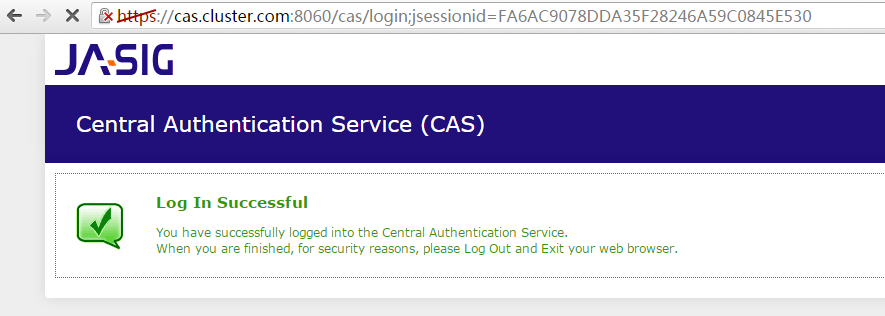
## 访问cas-server（注意配置host）

查看Cas默认的用户名和密码

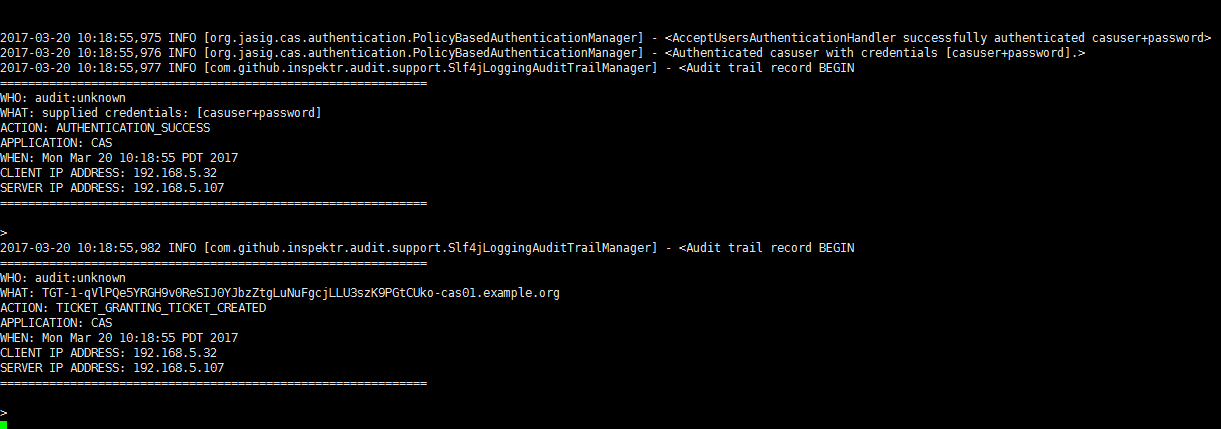








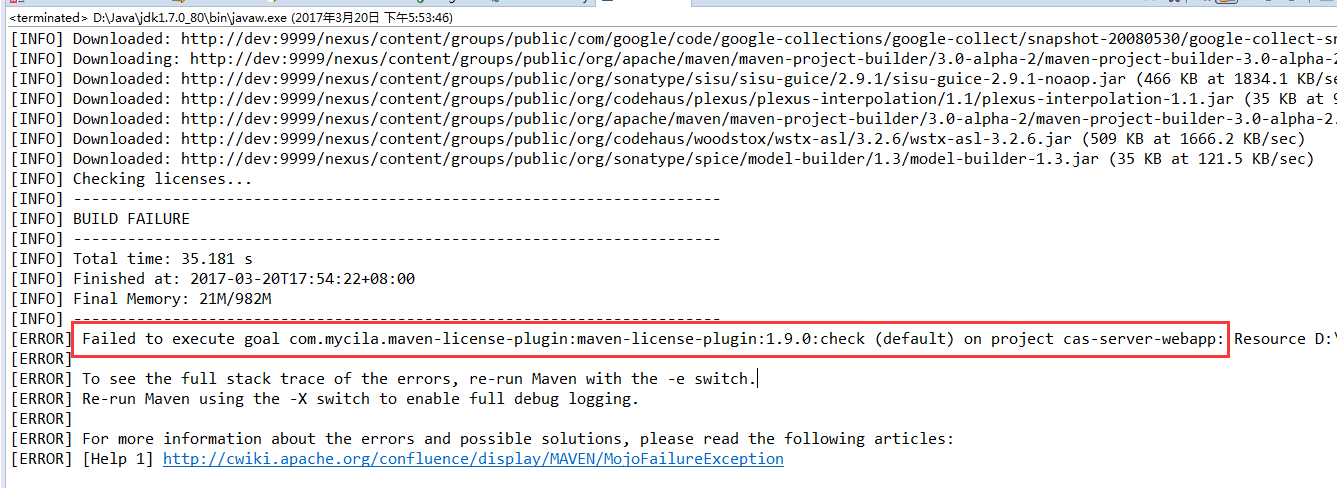
后台日志输出



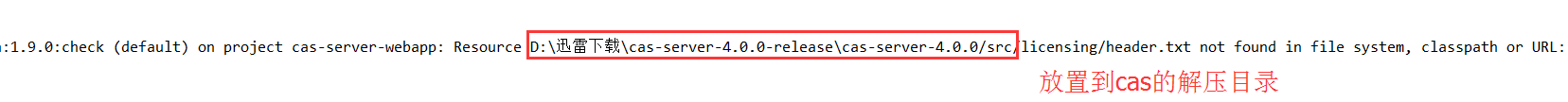
## 配置cas-server为数据库验证方式

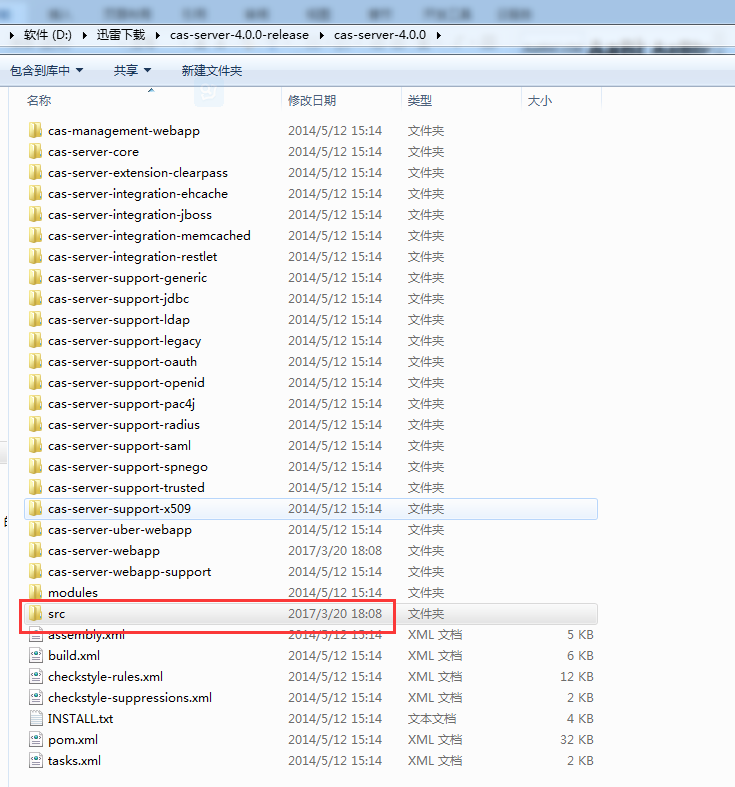
导入到eclipse

cas-server-4.0.0编译报错,缺少文件



添加到cas解压目录





添加依赖cas-support-jdbc和mysql驱动依赖

<dependency>

<groupId>org.jasig.cas</groupId>

<artifactId>cas-server-support-jdbc</artifactId>

<version>4.0.0</version>

</dependency>

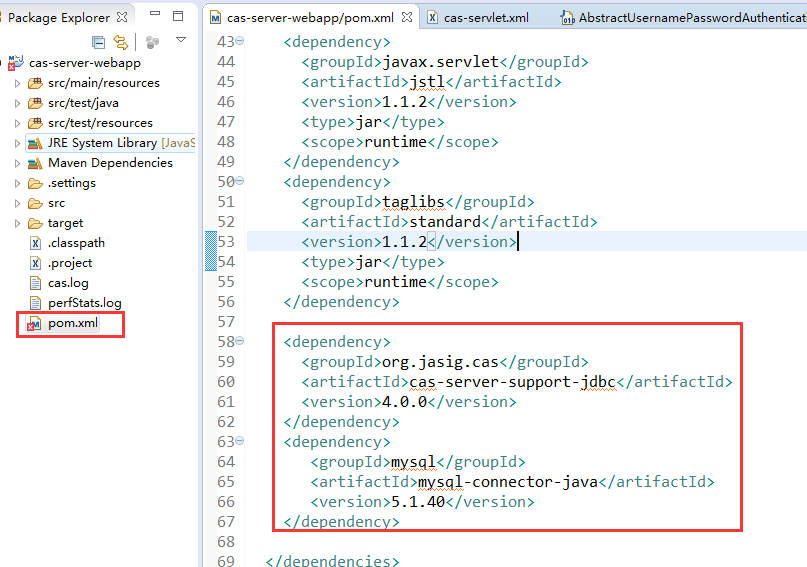
<dependency>

<groupId>mysql</groupId>

<artifactId>mysql-connector-java</artifactId>

<version>5.1.40</version>

</dependency>



修改deployerConfigContext.xml文件

添加dataSource，这里采用的是spring-jdbc模块（默认项目已经存在spring-jdbc包，使用其他连接方式需要添加依赖包），也可以配置其他连接方式，如druid连接池，c3p0等

<bean id=*"dataSource"* class=*"org.springframework.jdbc.datasource.DriverManagerDataSource"*>

<property name=*"driverClassName"* value=*"com.mysql.jdbc.Driver"*></property>

<property name=*"url"* value=*"jdbc:mysql://192.168.5.107:8002,192.168.5.107:8001/base\_data\_db"*></property>

<property name=*"username"* value=*"root"*></property>

<property name=*"password"* value=*""*></property>

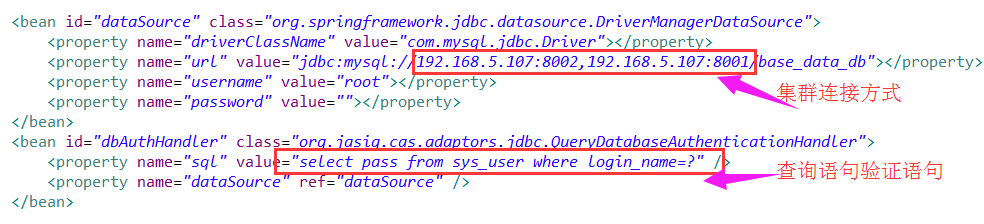
</bean>

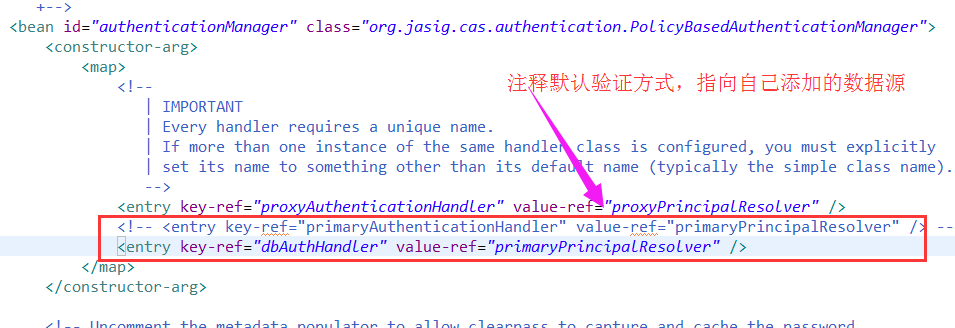
<bean id=*"dbAuthHandler"* class=*"org.jasig.cas.adaptors.jdbc.QueryDatabaseAuthenticationHandler"*>

<property name=*"sql"* value=*"select pass from sys\_user where login\_name=?"* />

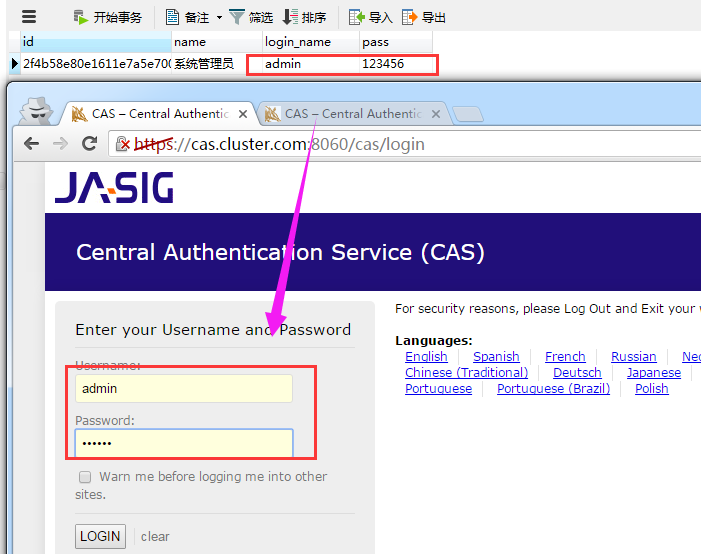
<property name=*"dataSource"* ref=*"dataSource"* />

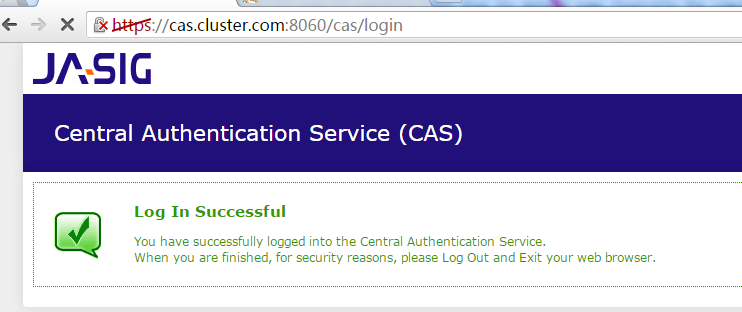
</bean>





编译，发包，验证





## 配置cas-server为数据库验证方式（自定义登录方式）

# 项目模型搭建

## 配置cas-server服务器

修改cas-server-webapp项目

修改deployerConfigContext.xml文件，增加配置

<bean id=*"attributeRepository"* class=*"org.jasig.services.persondir.support.jdbc.SingleRowJdbcPersonAttributeDao"*>

<constructor-arg index=*"0"* ref=*"dataSource"*/>

<constructor-arg index=*"1"* value=*"select id,name from sys\_user where {0}"*/>

<property name=*"queryAttributeMapping"*>

<map>

<!--这里的key需写username和登录页面一致，value对应数据库用户名字段-->

<entry key=*"username"* value=*"login\_name"*/>

</map>

</property>

<property name=*"resultAttributeMapping"*>

<map>

<!--key为对应的数据库字段名称，value为提供给客户端获取的属性名字，系统会自动填充值-->

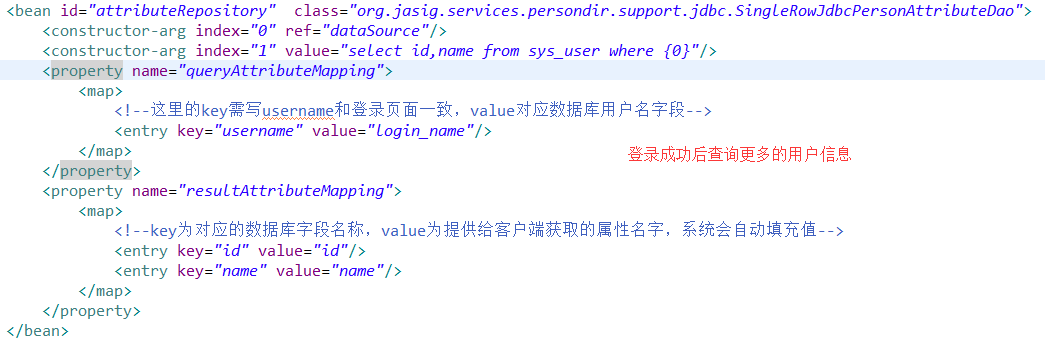
<entry key=*"id"* value=*"id"*/>

<entry key=*"name"* value=*"name"*/>

</map>

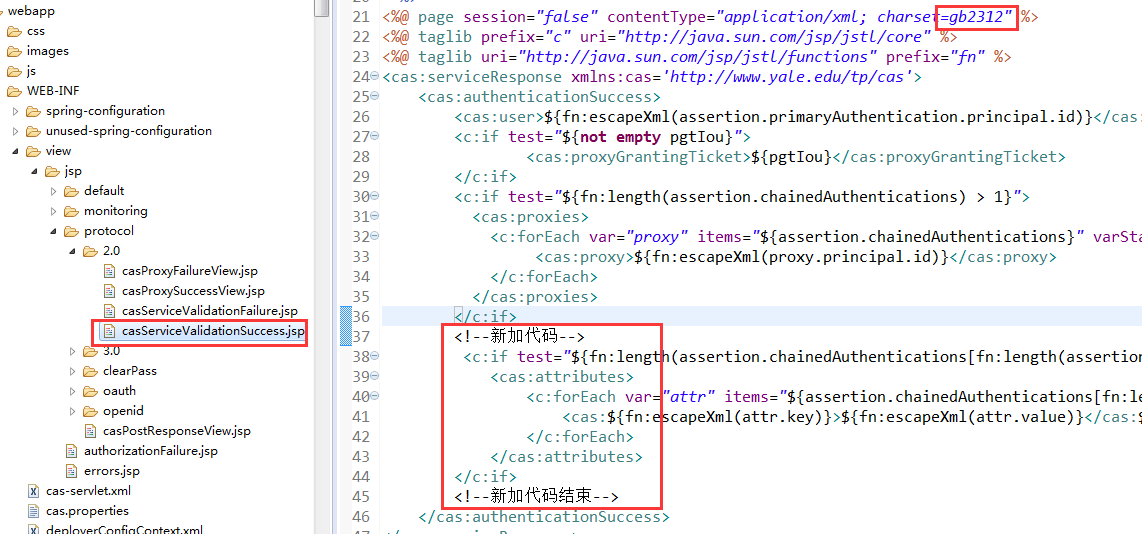
</property>

</bean>





修改casServiceValidationSuccess.jsp页面，添加代码，更多的用户信息，渲染给应用的用户数据

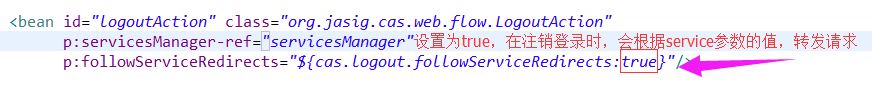


修改cas-servlet.xml

<bean id=*"logoutAction"* class=*"org.jasig.cas.web.flow.LogoutAction"*

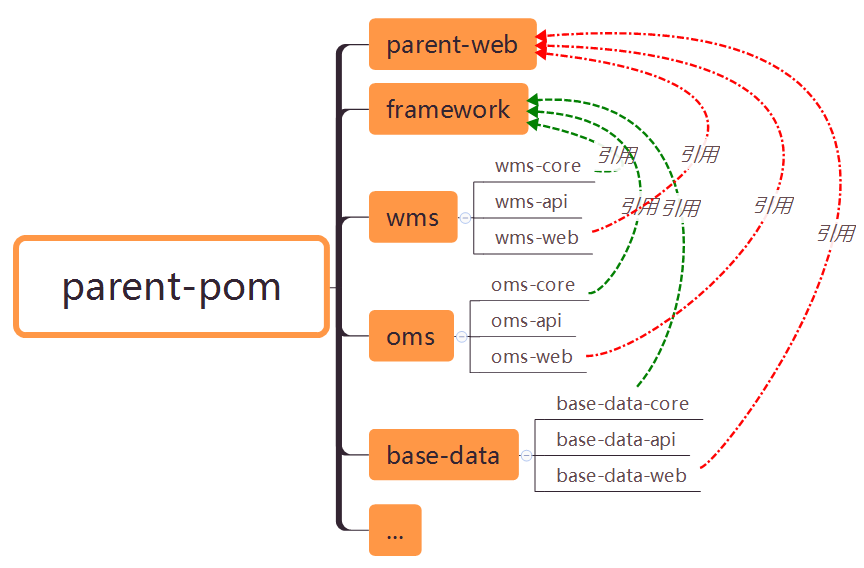
p:servicesManager-ref=*"servicesManager"*

p:followServiceRedirects=*"${cas.logout.followServiceRedirects:true}"*/>



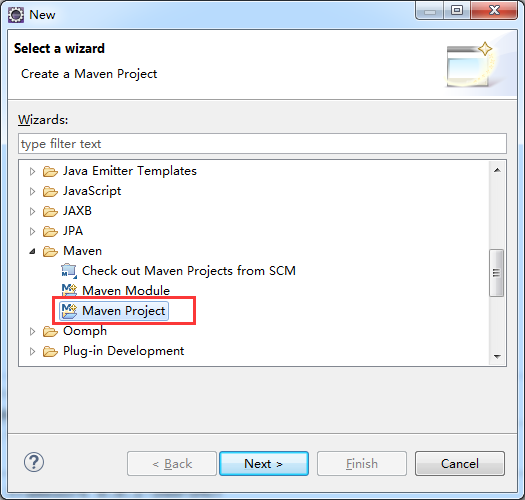
编译，部署

## 项目结构图

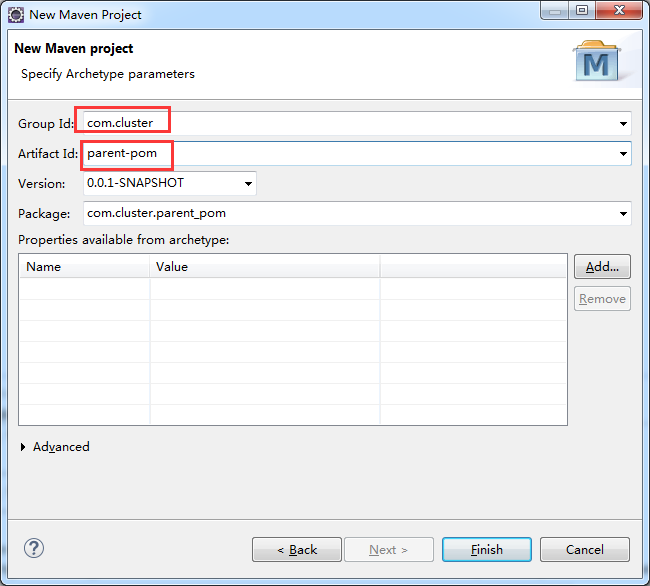


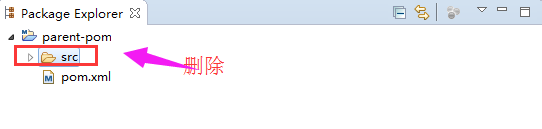
## 创建parent-pom父类项目

选择创建Maven Project项目









添加包版本

<properties>

<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>

<spring.version>4.1.4.RELEASE</spring.version>

<cas.client.core.version>3.2.1-RELEASE</cas.client.core.version>

</properties>

添加公共管理依赖包

<dependencyManagement>

<dependencies>

<!-- spring mvc -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-webmvc</artifactId>

<version>${spring.version}</version>

</dependency>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-web</artifactId>

<version>${spring.version}</version>

</dependency>

<!-- CAS Client -->

<dependency>

<groupId>org.jasig.cas.client</groupId>

<artifactId>cas-client-core</artifactId>

<version>${cas.client.core.version}</version>

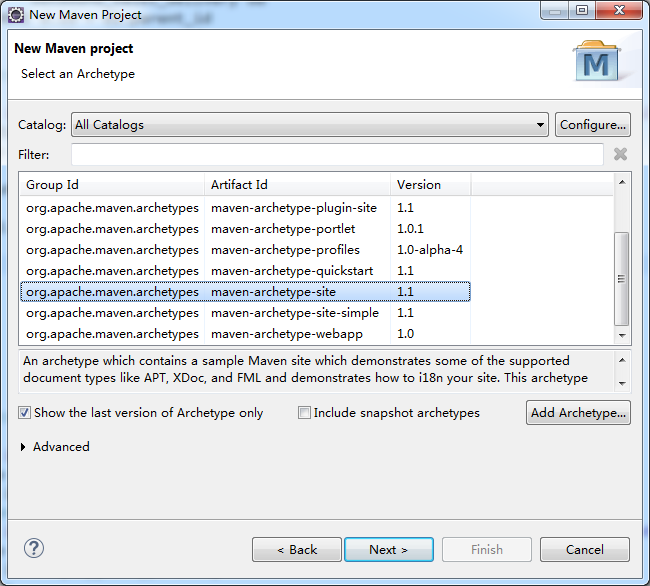
</dependency>

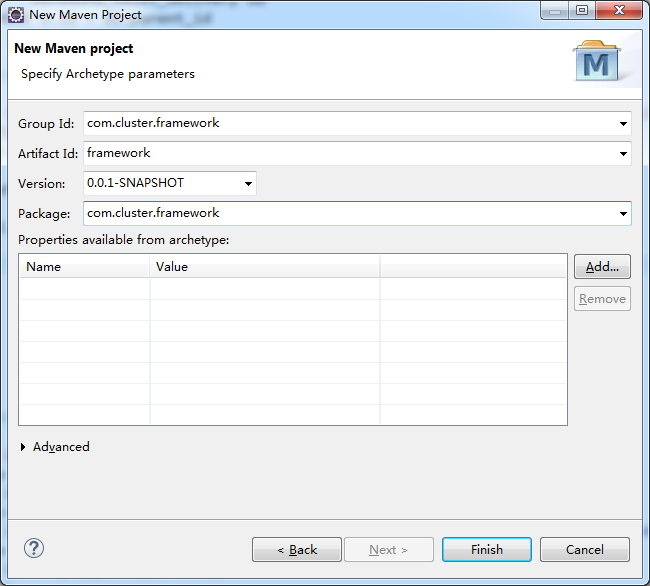
</dependencies>

</dependencyManagement>

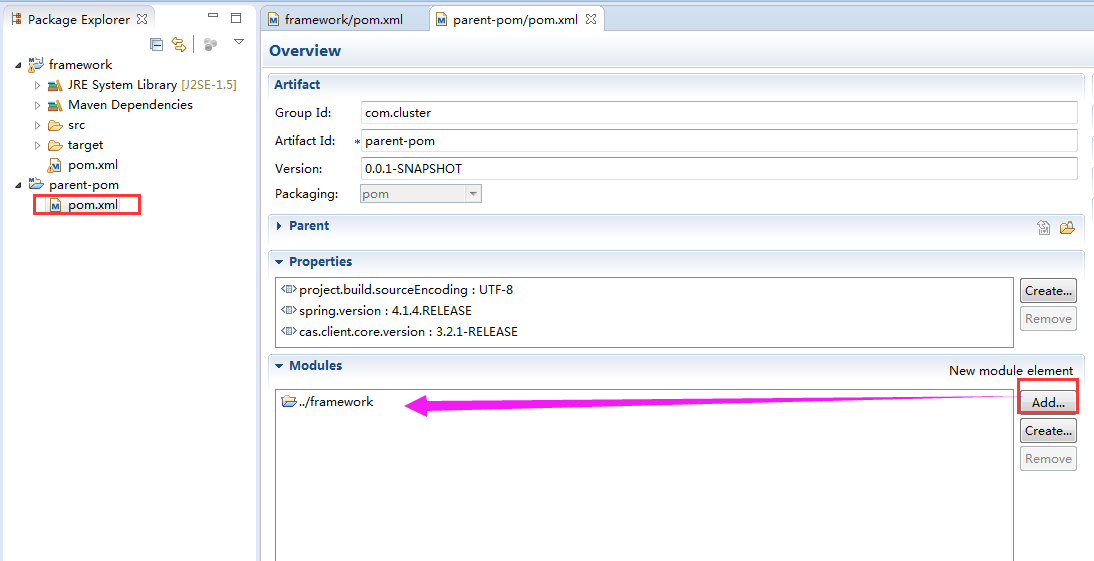
## 创建framework项目

选择创建Maven Project项目

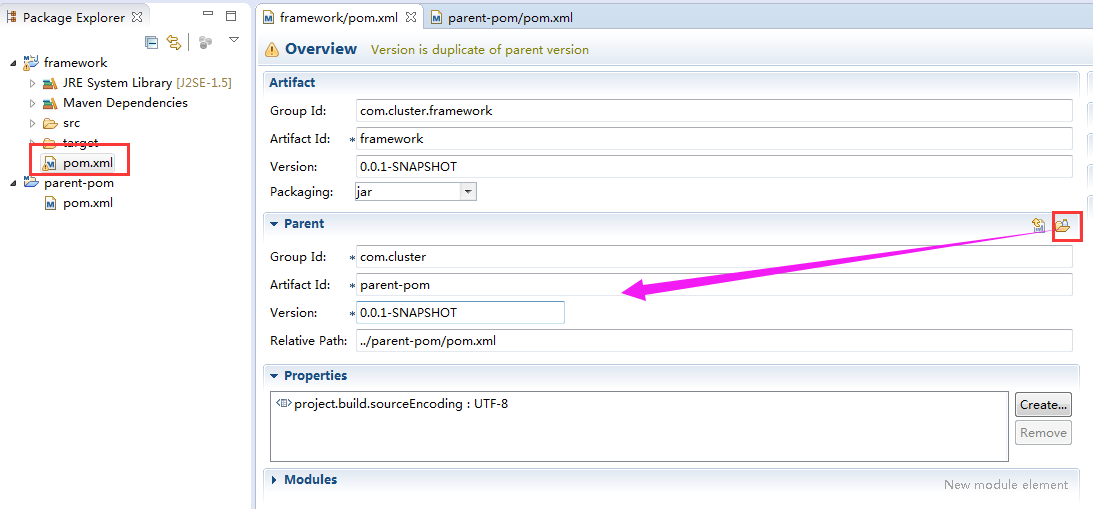




修改parent-pom项目的pom.xml文件，添加framework模块



修改framework项目的pom.xml文件，添加parent-pom依赖



修改framework项目的pom.xml文件

添加基础的包依赖

<dependencies>

<!-- spring mvc -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-webmvc</artifactId>

</dependency>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-web</artifactId>

</dependency>

<!-- CAS Client -->

<dependency>

<groupId>org.jasig.cas.client</groupId>

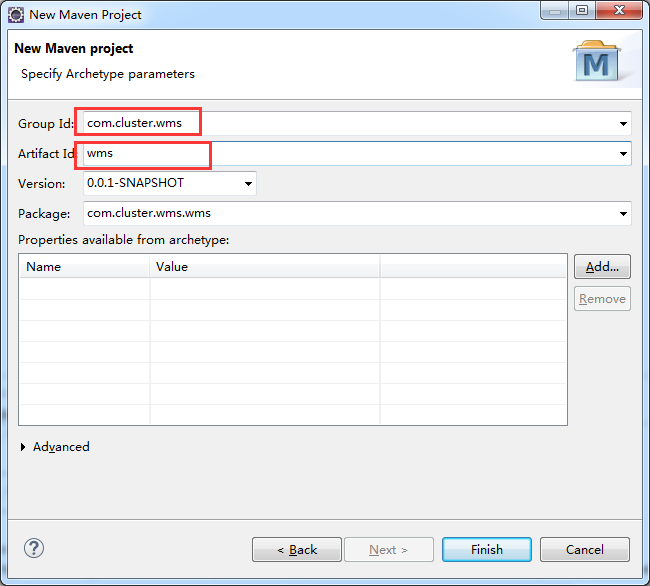
<artifactId>cas-client-core</artifactId>

</dependency>

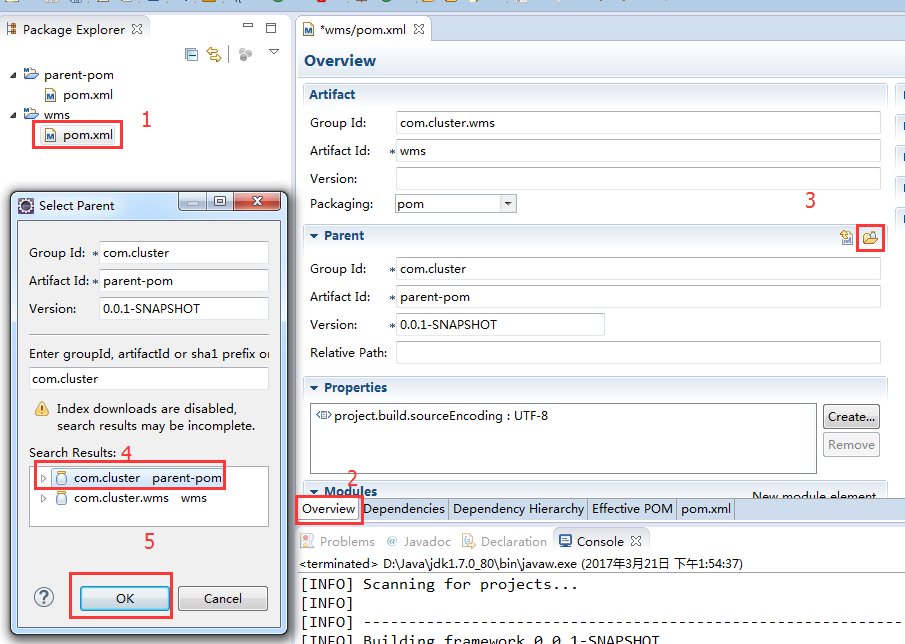
</dependencies>

## 创建wms父类项目

选择创建Maven Project项目

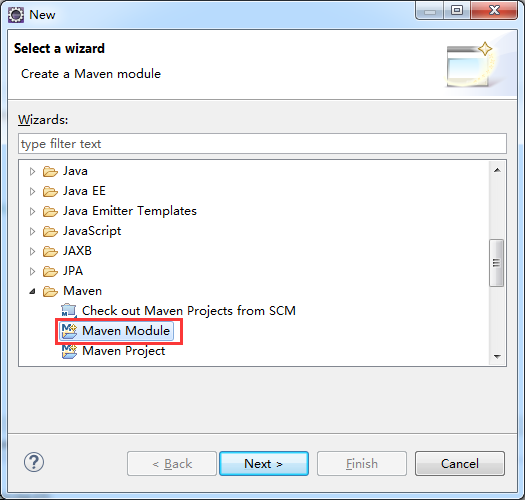


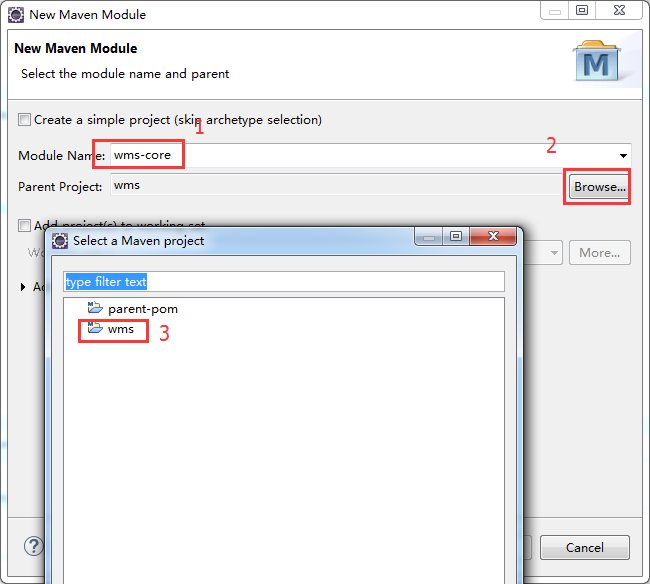
修改wms项目的pom.xml文件，添加parent-pom依赖

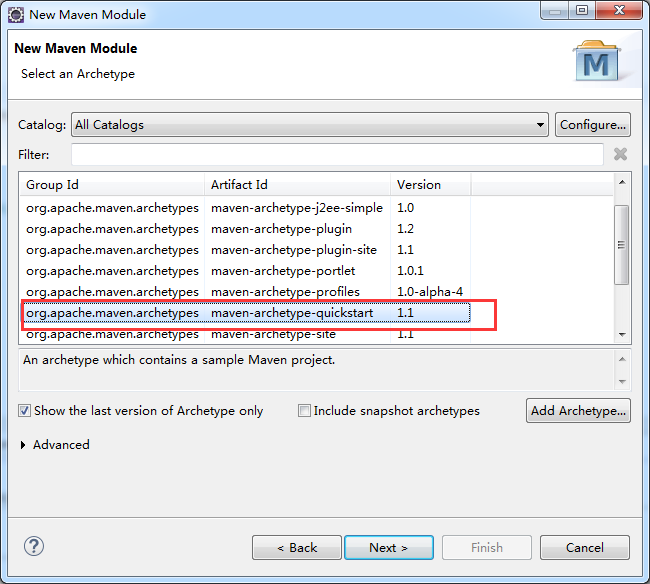


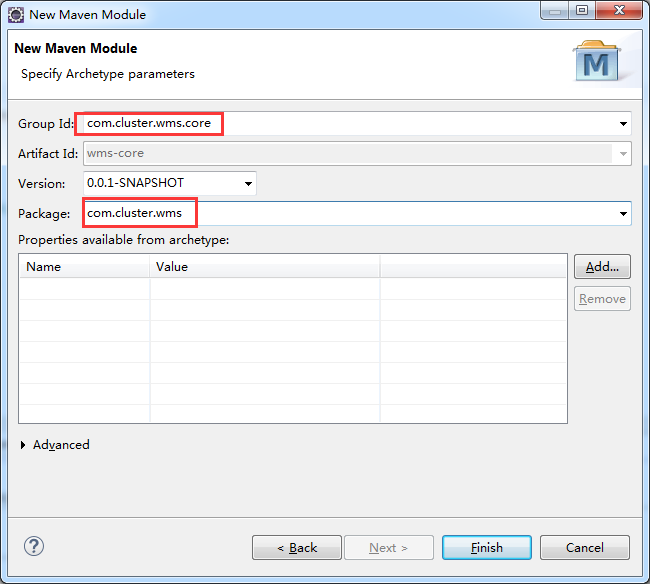
## 创建wms-core项目

选择创建Maven Module项目









添加framework依赖

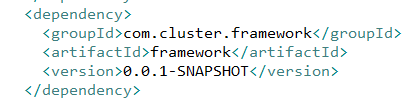
<dependency>

<groupId>com.cluster.framework</groupId>

<artifactId>framework</artifactId>

<version>0.0.1-SNAPSHOT</version>

</dependency>



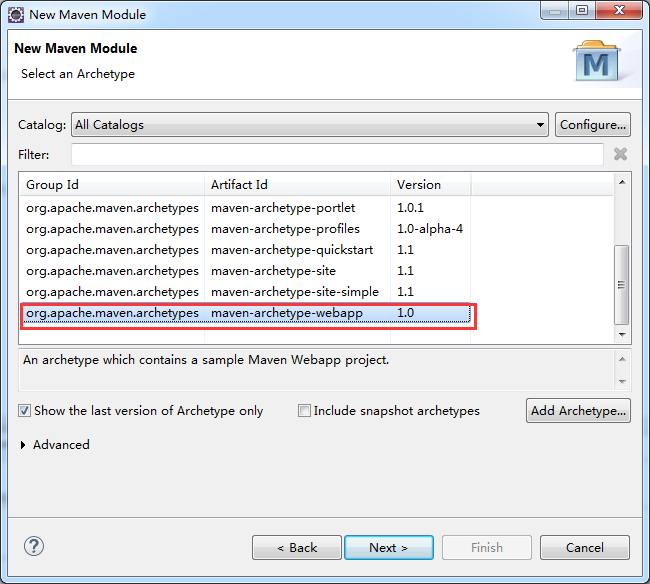
## 创建wms-api项目

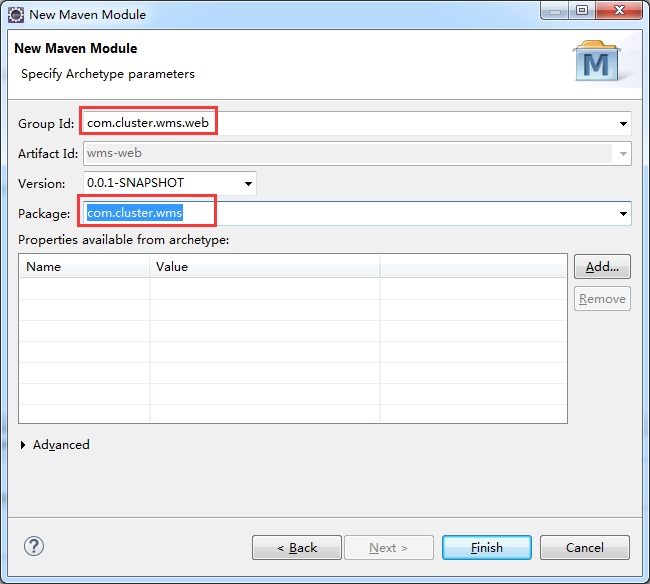
选择创建Maven Module项目

以同样的方式创建wms-api项目

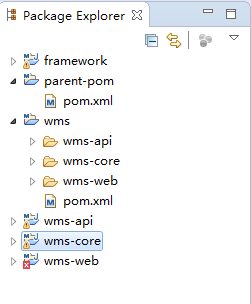
## 创建wms-web项目

选择创建Maven Module项目





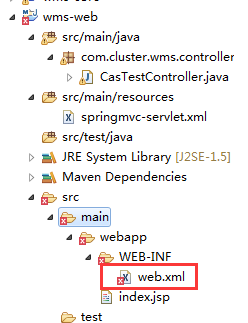
最终结构



添加servlet-api依赖

### 配置spring mvc

修改web.xml



<!-- Spring MVC -->

<servlet>

<servlet-name>springmvc</servlet-name>

<servlet-class>org.springframework.web.servlet.DispatcherServlet</servlet-class>

<init-param>

<param-name>contextConfigLocation</param-name>

<param-value>classpath:springmvc-servlet.xml</param-value>

</init-param>

<load-on-startup>1</load-on-startup>

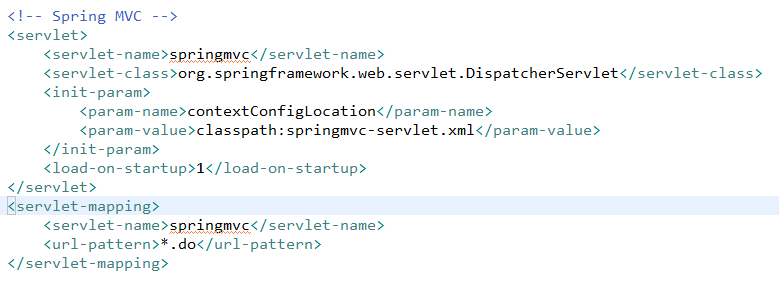
</servlet>

<servlet-mapping>

<servlet-name>springmvc</servlet-name>

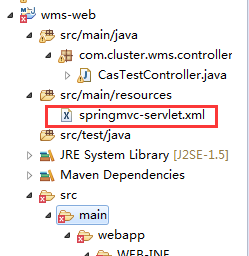
<url-pattern>\*.do</url-pattern>

</servlet-mapping>



### 配置springmvc-servlet.xml

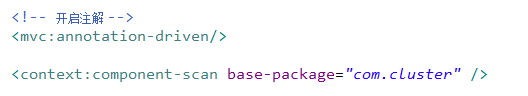
添加配置



<!-- 开启注解 -->

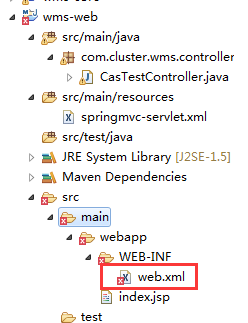
<mvc:annotation-driven/>

<context:component-scan base-package=*"com.cluster"* />



### 配置cas-client

修改web.xml



<!-- ======================== 单点登录结束 ======================== -->

<!-- 用于单点退出，该过滤器用于实现单点登出功能，可选配置 -->

<listener>

<listener-class>org.jasig.cas.client.session.SingleSignOutHttpSessionListener</listener-class>

</listener>

<!-- 该过滤器用于实现单点登出功能，可选配置。 -->

<filter>

<filter-name>CAS Single Sign Out Filter</filter-name>

<filter-class>org.jasig.cas.client.session.SingleSignOutFilter</filter-class>

</filter>

<filter-mapping>

<filter-name>CAS Single Sign Out Filter</filter-name>

<url-pattern>/\*</url-pattern>

</filter-mapping>

<!-- 该过滤器负责用户的认证工作，必须启用它 -->

<filter>

<filter-name>CASFilter</filter-name>

<filter-class>org.jasig.cas.client.authentication.AuthenticationFilter</filter-class>

<init-param>

<param-name>casServerLoginUrl</param-name>

<param-value>https://cas.cluster.com:8060/cas</param-value><!-- cas 服务器登录 地址 http://IP:PORT/CasWebProName/login -->

</init-param>

<init-param>

<!-- 这里的server是服务端的IP -->

<param-name>serverName</param-name>

<param-value>http://127.0.0.1:8080/wms-web/test.do</param-value><!-- 客户端服务器地址 http://IP:PORT -->

</init-param>

</filter>

<filter-mapping>

<filter-name>CASFilter</filter-name>

<url-pattern>/\*</url-pattern>

</filter-mapping>

<!-- 该过滤器负责对Ticket的校验工作，必须启用它 -->

<filter>

<filter-name>CAS Validation Filter</filter-name>

<filter-class>org.jasig.cas.client.validation.Cas20ProxyReceivingTicketValidationFilter</filter-class>

<init-param>

<param-name>casServerUrlPrefix</param-name>

<param-value>https://cas.cluster.com:8060/cas</param-value><!-- cas 服务器地址 http://IP:PORT/CasWebProName -->

</init-param>

<init-param>

<param-name>serverName</param-name>

<param-value>http://127.0.0.1:8080/wms-web/test.do</param-value><!-- 客户端服务器地址 http://IP:PORT -->

</init-param>

</filter>

<filter-mapping>

<filter-name>CAS Validation Filter</filter-name>

<url-pattern>/\*</url-pattern>

</filter-mapping>

<!-- 该过滤器负责实现HttpServletRequest请求的包裹， 比如允许开发者通过HttpServletRequest的getRemoteUser()方法获得SSO登录用户的登录名，可选配置。 -->

<filter>

<filter-name>CAS HttpServletRequest Wrapper Filter</filter-name>

<filter-class>org.jasig.cas.client.util.HttpServletRequestWrapperFilter</filter-class>

</filter>

<filter-mapping>

<filter-name>CAS HttpServletRequest Wrapper Filter</filter-name>

<url-pattern>/\*</url-pattern>

</filter-mapping>

<!-- 该过滤器使得开发者可以通过org.jasig.cas.client.util.AssertionHolder来获取用户的登录名。 比如AssertionHolder.getAssertion().getPrincipal().getName()。 -->

<filter>

<filter-name>CAS Assertion Thread Local Filter</filter-name>

<filter-class>org.jasig.cas.client.util.AssertionThreadLocalFilter</filter-class>

</filter>

<filter-mapping>

<filter-name>CAS Assertion Thread Local Filter</filter-name>

<url-pattern>/\*</url-pattern>

</filter-mapping>

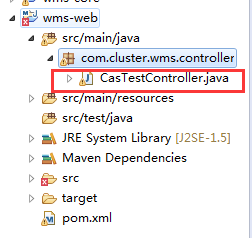
<!-- ======================== 单点登录结束 ======================== -->







### 创建CasTestController测试类



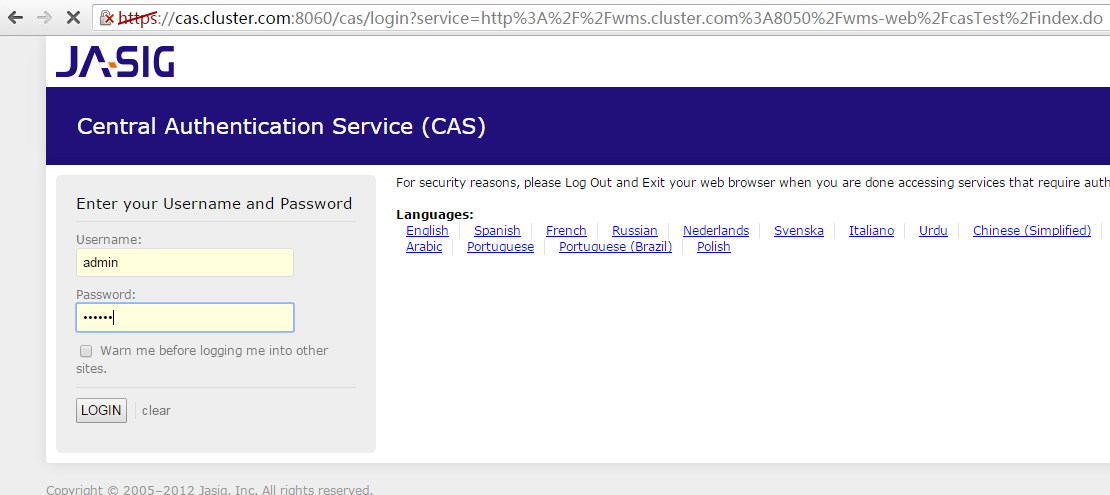


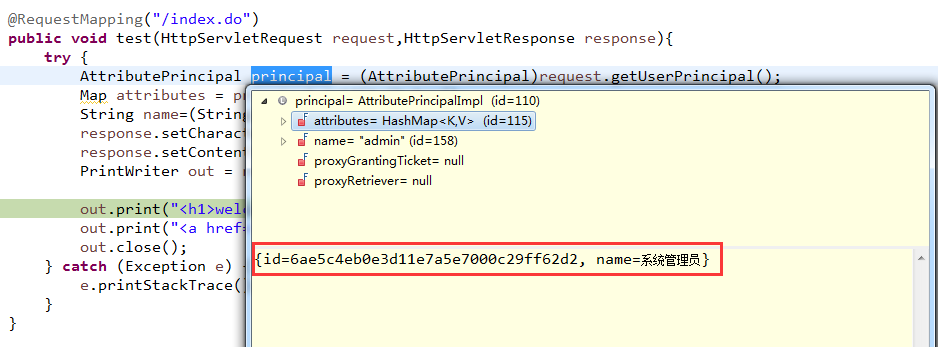


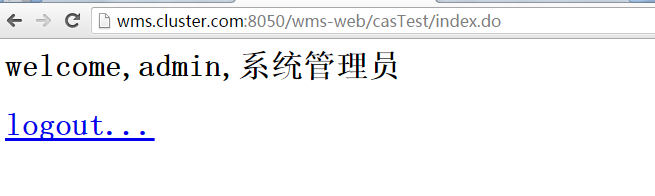
* + - 1. Debug

访问

http://wms.cluster.com:8050/wms-web/casTest/index.do







### 编写自己的cas单点登录页面

### 异常

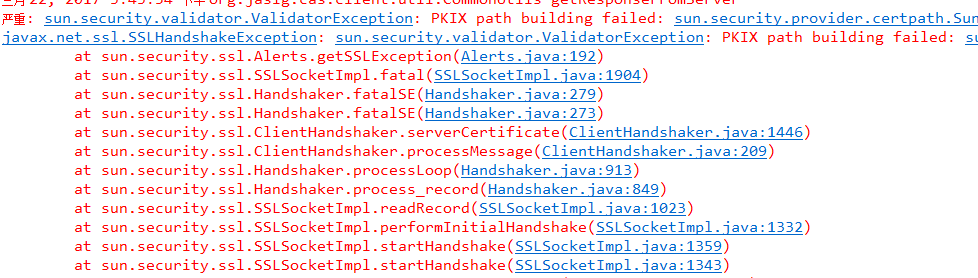
* + - 1. java.security.cert.CertificateException:异常



如何解决：



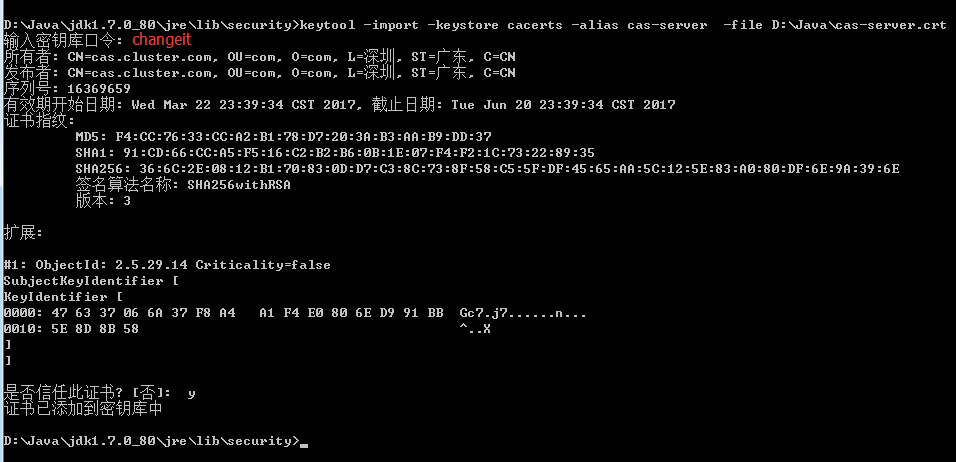
* + - 1. sun.security.validator.ValidatorException:异常



如何解决：

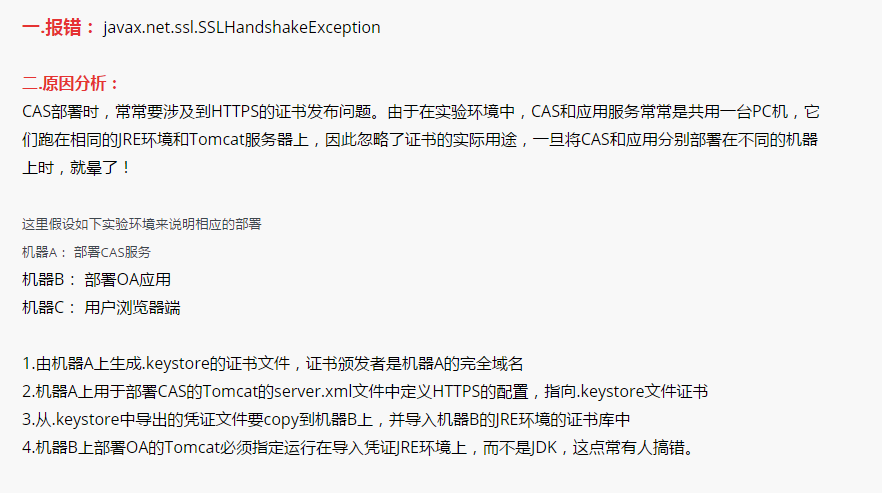
需要将cas-server服务器中生成的证书导入到应用部署的服务器

（注：进去jdk目录导入，否则可能出现IO错误）



详见：

<https://my.oschina.net/laiwanshan/blog/159057>



创建超级管理员webapp用户

GRANT ALL PRIVILEGES ON \*.\* TO 'webapp'@'%' identified by '123456' WITH GRANT OPTION;

刷新权限生效

FLUSH PRIVILEGES;

# 附录

## vi编辑器没有颜色

[root@mail test]#rpm -qa|grep vim  
vim-minimal-6.1-29  
vim-common-6.1-29  
vim-enhanced-6.1-29  
  
直接用yum升级安装就ok了，  
[root@mail test]#yum -y install vim-enhanced  
  
安装完毕后，vi个文件试试，还是不行，原来是链接文件也要修改，ok，因为如下：  
[root@mail test]# ll /bin/vi  
lrwxrwxrwx  1 root root 12 Dec  9 10:52 /bin/vi -> /usr/bin/vim  
  
那就修改下吧：  
[root@mail test]#mv /bin/vi /bin/vi.bak  
[root@mail test]#ln -s /usr/bin/vim /bin/vi  
  
顺便修改下vi的设置，对编写perl代码更方便：  
[root@mail test]# vi /etc/vimrc  
  
  syntax on  
  set hlsearch  
  set nu  
  set tabstop=4  
  set shiftwidth=4  
  set expandtab  
  set shiftround  
  
OK，这样就可以很爽的用perl了

## Rz命令安装

## tree显示目录树

安装

[root@localhost software]# yum -y install tree

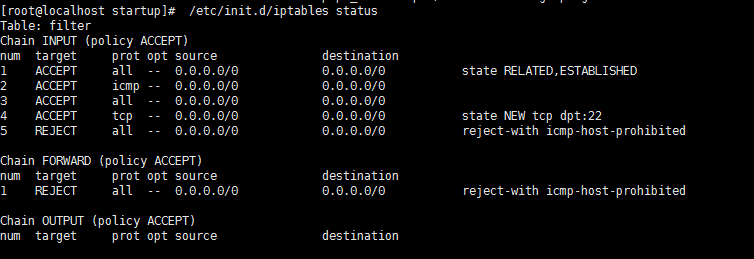


## 关闭防火墙

### 临时关闭防火墙命令

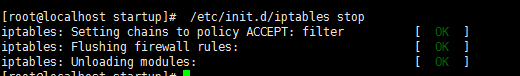
查看状态

[root@localhost startup]# /etc/init.d/iptables status



临时关闭

[root@localhost startup]# /etc/init.d/iptables stop



### 永久关闭防火墙命令

[root@localhost startup]# chkconfig iptables off

（重启电脑生效）



## 查看系统位数命令

[root@localhost ~]# getconf LONG\_BIT



## 查看隐藏文件命令

[root@bogon support-files]# ls -a

