南昌大学

NANCHANG UNIVERSITY

云计算设计大作业报告

题　　目: 基于云部署上线企业项目
学　　院: 软件学院
专　　业: 信息安全
班　　级: 193 班
完成人数: 1 人
人　　员: 丁俊
起讫日期: 2021.9.04—2021.9.19
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完成时间: 2021.9.21
填表日期: 2021 年 9 月 21 日

目录

1. GITLAB 3

2. JENKINS 6

1. 安装 java 环境 6

2. 配置 tomcat 6

3、安装 jenkins 7

3. WWW1 11

4. WWW2 14

5. ZABBIX 18

6. NGINX 24

1、NGINX 安装 24

2、NGINX 虚拟主机配置 24

3、配置负载均衡 25

1. gitlab

1.1 安装 Gitlab

vim /etc/yum.repos.d/gitlab-ce.repo//新建

```
[root@iZbp14treyupiwhuilqqg8Z ~]# vim /etc/yum.repos.d/gitlab-ce.repo

[gitlab-ce]
name=Gitlab CE Repository
baseurl=https://mirrors.tuna.tsinghua.edu.cn/gitlab-ce/yum/el$releasever/
gpgcheck=0
enabled=1
~
~
~
```

yum install gitlab-ce -y//安装

配置 gitlab：

vim /etc/gitlab/gitlab.rb//域名改为 IP

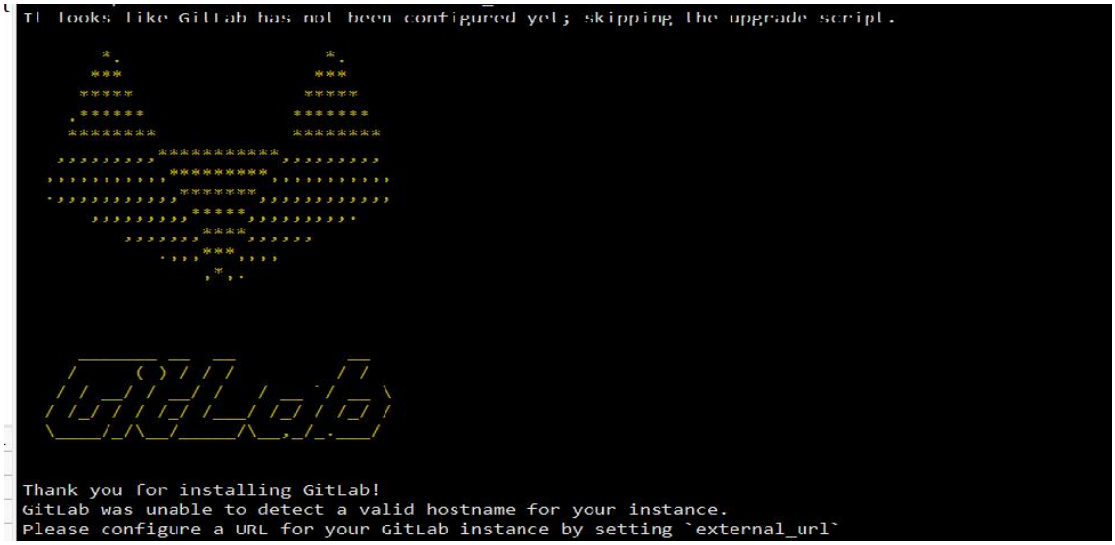
```
##! On AWS EC2 instances, we also attempt to fetch the public hostname/I
##! address from AWS. For more details, see:
##! https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/instancedata-dat
external_url '123.60.53.78'

## Roles for multi-instance GitLab
##! The default is to have no roles enabled, which results in GitLab run
##! Options:
##!   redis_sentinel_role redis_master_role redis_replica_role geo_prima
##!   postgres_role consul_role application_role monitoring_role
##! For more details on each role, see:
-- INSERT --
```

初始化启动 gitlab

gitlab-ctl reconfigure

gitlab-ctl stop

gitlab-ctl start



1.2 登录 Gitlab

cat /etc/gitlab/initial_root_password//获取登录密码成功登录

1.3 配置 Gitlab

新建项目名称为 our_apps(设为公开）

上传 ssh 公钥（获取 root 以及 Jenkins 公钥）

```
[root@hecs-x-large-2-linux-20210914145605 ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
/root/.ssh/id_rsa already exists.
Overwrite (y/n)?
[root@hecs-x-large-2-linux-20210914145605 ~]#
[root@hecs-x-large-2-linux-20210914145605 ~]# ls /root/.ssh/
authorized_keys  id_rsa  id_rsa.pub  known_hosts
[root@hecs-x-large-2-linux-20210914145605 ~]# cat /root/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCrOS1OTkgUGeXbgbXR5DkcczvFdobKZGSo0xQ8+fuEBlEjMckttB1pI6Vi+uA9UccUlsLFO6aM7w8t2MCPjRH3IuIizZ+Mqlb8dLI34NSjinTXoAkBboZigv6bJpnA2S0J
8pD4un4b7JkwipPagA6M9MPypaLgNVbC4icGZoHeBLg2gJMmf6hKSmJIOoJToHdVhRM2ykkhSHFFtWFSb9Rlx0S3MkwvIl7z6O+UGHJlkN/jvxLF5VHglhcA2U667U4TPlgNB6ZVKRlFpSTmPYsh4hx7Znr6quCbAsrMOUJs
4gH7oizD/zb6RJj9Z5k7bSaoCxOp+Q5N3jSB2lkpgqUP root@hecs-x-large-2-linux-20210914145605
[root@hecs-x-large-2-linux-20210914145605 ~]#
```

拉取项目

```
# git clone git@123.60.53.78:root/our_apps.git      #把仓库 clone 到客户端
# cd our_apps.git
# mv qqfarm .
# git add .
# git commit -m "V1"        #打标签 V1
```

git config --global user.email "root@hecs-x-large-2-linux-20210914145605"
git config --global user.name "root"
git push -u origin main　　#进行提交
拉取项目成功

2. jenkins

1. 安装 java 环境

[root@jenkins ~]# yum install lrzsz -　// 安装 rz 命令
[root@jenkins ~]# rz　上传 jdk1.8 的压缩包
[root@jenkins ~]# tar xf jdk-8u211-linux-x64.tar.gz -C /usr/local
[root@jenkins local]# vim /etc/profile.d/java.sh
(写入以下内容)
#!/bin/bash
JAVA_HOME=/usr/local/java1.8
PATH=$JAVA_HOME/bin:$PATH
export JAVA_HOME PATH
[root@jenkins local]# # source /etc/profile.d/java.sh

```
[root@jenkins local]# java -version
java version "1.8.0_211"
Java(TM) SE Runtime Environment (build 1.8.0_211-b12)
Java HotSpot(TM) 64-Bit Server VM (build 25.211-b12, mixed mode)
[root@jenkins local]#
```

解压 apache 这个压缩包

把 war 包放到/usr/local/tomcat7/webapps 目录，重启 tomcat，就能够自动把 jenkins.war 包解压变成一个 jenkins 目录。

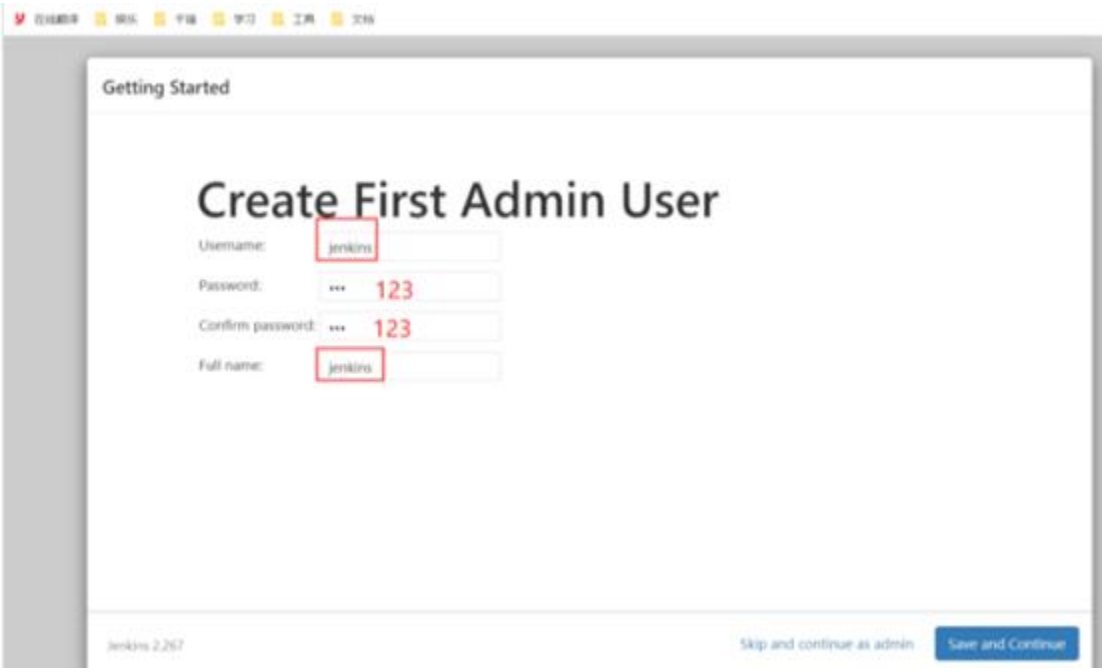
2. 配置 tomcat

[root@jenkins local]# tar xf apache-tomcat-7.0.94.tar.gz -C /usr/local //　解压 tomcat 压缩包
[root@jenkins local]# cd /usr/local

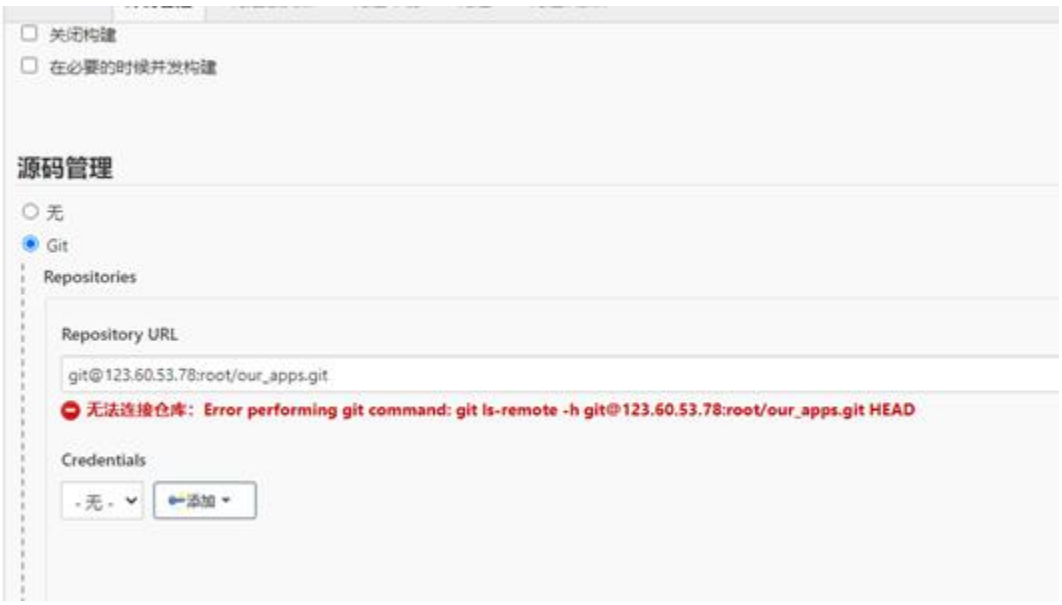
[root@jenkins local]# mv apache-tomcat-7.0.94/ tomcat7 // 改名
[root@jenkins local]# cp jenkins.war /usr/local/tomcat7/webapps/ // 把 jenkins.war 放在 webapps 目录下
[root@jenkins local]# /usr/local/tomcat7/bin/startup.sh // 启动 tomcat
[root@jenkins local]# netstat -tnlp // 查看 8080 端口

3、安装 jenkins

在 jenkins 机器中查看上述文件把密码输入到下面用于解锁 jenkins。
cat /root/.jenkins/se crets/initialAdminPassword

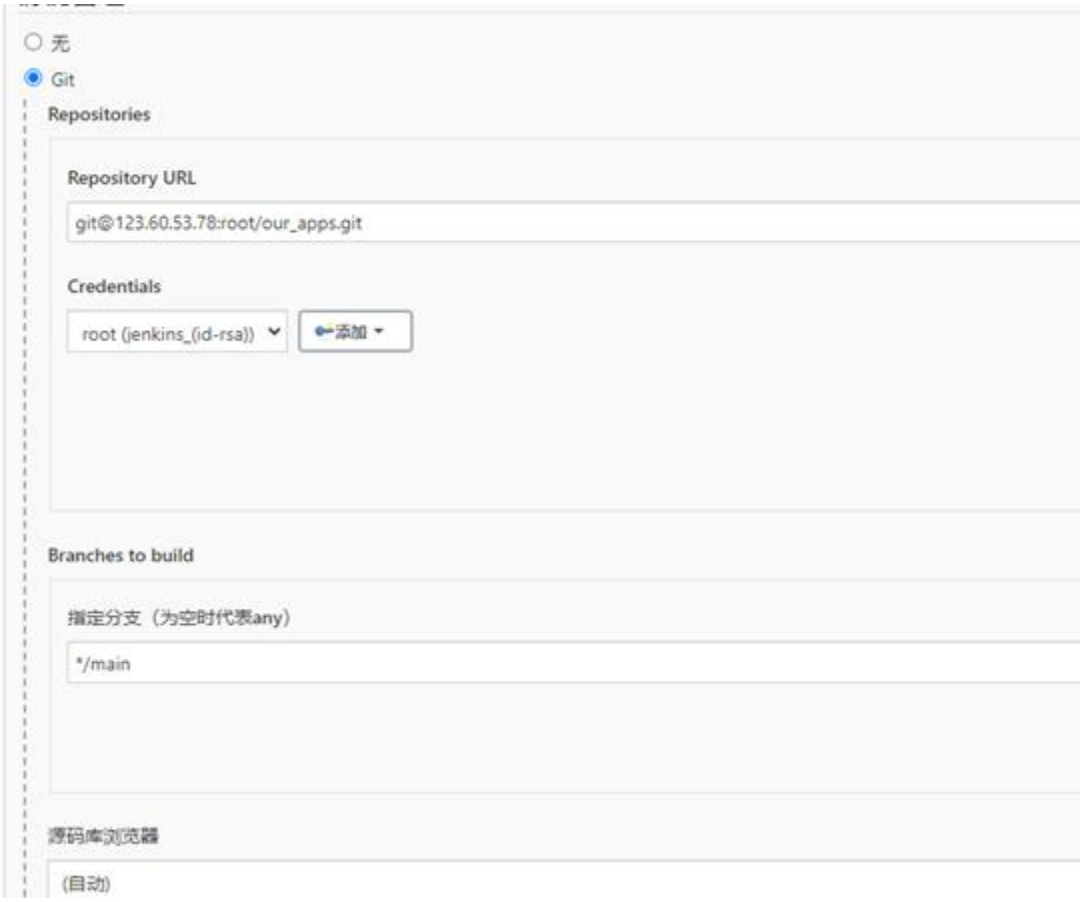

Getting Started
Create First Admin User
Username:
jenkins
Password:
123
Confirm password:
123
Full name:
jenkins
Jenkins 2.267
Skip and continue as admin
Save and Continue


Jenkins
Dashboard
Lockable Resources
欢迎来到 Jenkins!
This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.
Start building your software project
Create a job
Set up a distributed build
Set up an agent
Configure a cloud
Learn more about distributed builds


关闭构建
在必要的时候并发构建
源码管理
无
Git
Repositories
Repository URL
git@123.60.53.78:root/our_apps.git
无法连接仓库：Error performing git command: git ls-remote -h git@123.60.53.78:root/our_apps.git HEAD
Credentials
- 无 -
添加


Git
Git installations
Git
Name
git
Path to Git executable
/usr/bin/git
自动安装


SSH Username with private key
全局 (Jenkins, nodes, items, all child items, etc)
ID
jenkins_(id-rsa)
Username
Private Key
Enter directly
Key
Passphrase




```
[root@jenkins ~]# ls /root/.jenkins/workspace/myapp_qqfarm
README.md  upload
[root@jenkins ~]# ls /root/.jenkins/workspace/myapp_qqfarm/upload
bbs  home  index.php  install  logo.jpg  qqfarm.sql  ucenter
[root@jenkins ~]#
```

4、jenkins 同步项目文件夹

[root@jenkins ~]# yum install nfs-utils -y // 安装 nfs
[root@jenkins ~]# vim /etc/exports

/root/.jenkins/workspace/myapp_qqfarm 124.70.191.42(rw,sync,no_root_squash)
// 可读可写，立即同步
/root/.jenkins/workspace/myapp_qqfarm 124.71.168.100(rw,sync,no_root_squash)
[root@jenkins ~]# systemctl restart nfs // 重启 nfs 服务

// 验证
[root@jenkins ~]# showmount -e 120.55.84.159
Export list for 120.55.84.159:
/root/.jenkins/workspace/myapp_qqfram 124.71.168.100,124.70.191.42

3. www1

1. 构建 LAMP 架构

Linux + APache + MySQL + PHP

1.Apache 服务

yum install httpd -y

systemctl start httpd

systemctl satrt mariadb //安装 mariadb 数据库的，默认没有密码

2.PHP 服务：

yum install php php-mysql -y

3.修改 apache 配置文件，配置 php 跟 apache 联动

vim /etc/httpd/conf/httpd.conf

//在指定位置添加上 index.php

```
#
<IfModule dir_module>
    DirectoryIndex index.html index.php
</IfModule>
```

4.# systemctl restart httpd　　//重启服务

测试 apache 是否能跟 php 联动

vim /var/www/html/index.php

```
[root@QF ~]# cat /var/www/html/index.php
<?php
        phpinfo();
?>
[root@QF ~]#
```

5.浏览器访问测试

PHP Version 5.4.16

System	Linux hecs-x-large-2-linux-20210914154053 3.10.0-1160.15.2.el7.x86_64 #1 SMP Wed Feb 3 15:06:38 UTC 2021 x86_64
Build Date	Apr 1 2020 04:08:16
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/curl.ini, /etc/php.d/fileinfo.ini, /etc/php.d/json.ini, /etc/php.d/mysql.ini, /etc/php.d/mysqli.ini, /etc/php.d/pdo.ini, /etc/php.d/pdo_mysql.ini, /etc/php.d/pdo_sqlite.ini, /etc/php.d/phar.ini, /etc/php.d/sqlite3.ini, /etc/php.d/zip.ini
PHP API	20100412
PHP Extension	20100525
Zend Extension	220100525
Zend Extension Build	API220100525,NTS
PHP Extension Build	API20100525,NTS
Debug Build	no

二：部署 nfs，实现数据库同步

修改配置文件

[root@master ~]# vim /etc/my.cnf

[mysqld]

log-bin=binlog #开启二进制日志

server-id=1 #指定服务 id

重新启动服务

[root@master ~]# systemctl restart mysqld

查看日志：

```
MariaDB [(none)]> show master status;
+---------------+----------+--------------+------------------+
| File          | Position | Binlog_Do_DB | Binlog_Ignore_DB |
+---------------+----------+--------------+------------------+
| binlog.000003 |      402 |              |                  |
+---------------+----------+--------------+------------------+
```

实现数据库同步：

MariaDB [(none)]> change master to

master_host='124.71.168.100',

master_port=3306,master_user='repluser',

master_password='Qf..2021',

master_log_file='binlog.000003',

master_log_pos=402;

```
MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| abc                |
| mysql              |
| performance_schema |
| test               |
+--------------------+
5 rows in set (0.00 sec)

MariaDB [(none)]> create database ghj;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]>
```

三：构建 Zabbix 被监控端:

# rpm -Uvh https://repo.zabbix.com/zabbix/5.0/rhel/7/x86_64/zabbix-release-5.0-1.el7.noarch.rpm //会安装出一个 zabbix.repo
# yum clean all
# yum install zabbix-agent -y
# vim /etc/zabbix/zabbix_agent.conf
Server=121.40.30.90 //改为监控端的 IP
ServerActive=121.40.30.90 //改为监控端的 IP
Hostname=zabbix server //修改主机名，web1

四.测试结果

4. www2

2. 构建 LAMP 架构

Linux + APache + MySQL + PHP

环境：Linux 发行版 centos 7.6 64 位

Apache 服务

yum install httpd -y
systemctl start httpd
systemctl satrt mariadb //安装 mariadb 数据库的，默认没有密码

PHP 服务：
yum install php php-mysql -y

修改 apache 配置文件，配置 php 跟 apache 联动
vim /etc/httpd/conf/httpd.conf
//在指定位置添加上 index.php

```
#
<IfModule dir_module>
    DirectoryIndex index.html index.php
</IfModule>
```

systemctl restart httpd　　//改了配置文件一定记得重启服务
测试 apache 是否能跟 php 联动
vim /var/www/html/index.php

```
[root@QF ~]# cat /var/www/html/index.php
<?php
        phpinfo();
?>
[root@QF ~]#
```

最后浏览器访问测试

PHP Version 5.4.16

System	Linux hecs-x-large-2-linux-20210914154053 3.10.0-1160.15.2.el7.x86_64 #1 SMP Wed Feb 3 15:06:38 UTC 2021 x86_64
Build Date	Apr 1 2020 04:08:16
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/curl.ini, /etc/php.d/fileinfo.ini, /etc/php.d/json.ini, /etc/php.d/mysql.ini, /etc/php.d/mysqli.ini, /etc/php.d/pdo.ini, /etc/php.d/pdo_mysql.ini, /etc/php.d/pdo_sqlite.ini, /etc/php.d/phar.ini, /etc/php.d/sqlite3.ini, /etc/php.d/zip.ini
PHP API	20100412
PHP Extension	20100525
Zend Extension	220100525
Zend Extension Build	API220100525,NTS
PHP Extension Build	API20100525,NTS
Debug Build	no

项目上线环节：

rz　　//farm-ucenter1.5.zip

unzip farm-ucenter1.5.zip　　//会解压出一个 upload 目录

cp -r upload/ /var/www/html/

二：部署 nfs，实现数据库同步

修改配置文件

[root@master ~]# vim /etc/my.cnf

[mysqld]

log-bin=binlog #开启二进制日志

server-id=1 #指定服务 id

重新启动服务

[root@master ~]# systemctl restart mysqld

查看日志：

```
MariaDB [(none)]> show master status;
+---------------+----------+--------------+------------------+
| File          | Position | Binlog_Do_DB | Binlog_Ignore_DB |
+---------------+----------+--------------+------------------+
| binlog.000003 |      402 |              |                  |
+---------------+----------+--------------+------------------+
```

实现数据库同步：

MariaDB [(none)]> change master to

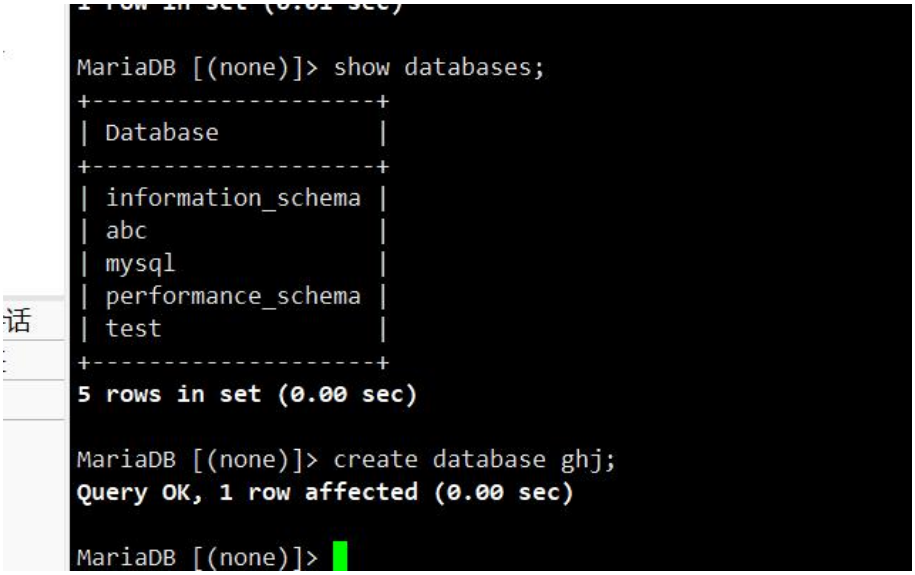
master_host='124.71.168.100',

master_port=3306,master_user='repluser',

master_password='Qf..2021',

master_log_file='binlog.000003',

master_log_pos=402;



三：构建 Zabbix 被监控端:

rpm -Uvh

https://repo.zabbix.com/zabbix/5.0/rhel/7/x86_64/zabbix-release-5.0-1.el7.noarch.rpm

//会安装出一个 zabbix.repo

yum clean all

yum install zabbix-agent -y

vim /etc/zabbix/zabbix_agent.conf

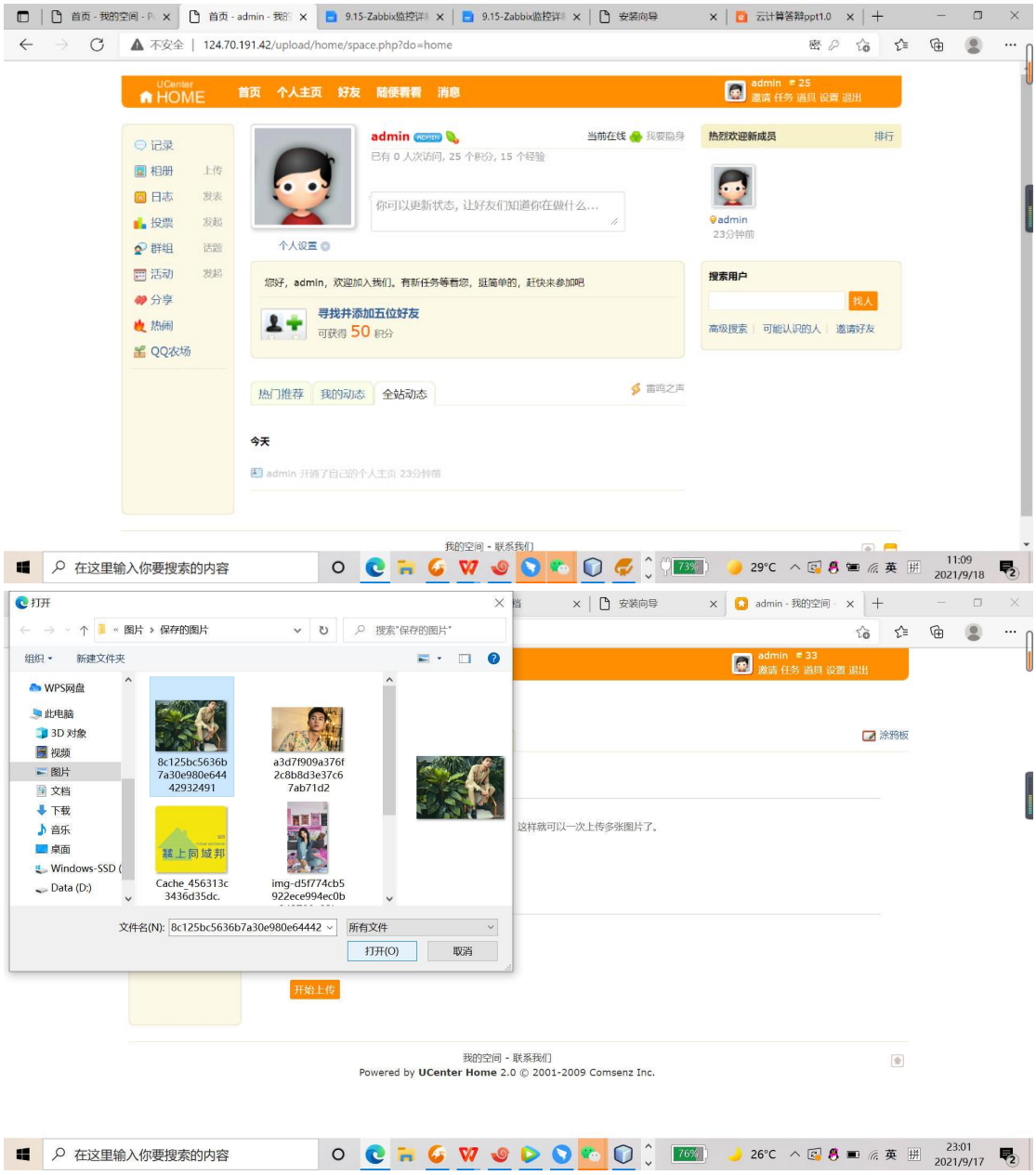
Server=121.40.30.90 //改为监控端的 IP

ServerActive=121.40.30.90 //改为监控端的 IP

Hostname=zabbix server //随便修改主机名，web1

```
Bye
[root@hecs-x-large-2-linux-20210914154053 ~]# grep "^Server" /etc/zabbix/
zabbix_agetd.conf
grep: /etc/zabbix/zabbix_agetd.conf: No such file or directory
[root@hecs-x-large-2-linux-20210914154053 ~]# grep "^Server" /etc/zabbix/
zabbix_agentd.conf
Server=121.40.30.90
ServerActive=121.40.30.90
[root@hecs-x-large-2-linux-20210914154053 ~]#
```

四：结果检测



5. zabbix

#配置 zabbix 安装 yum 源

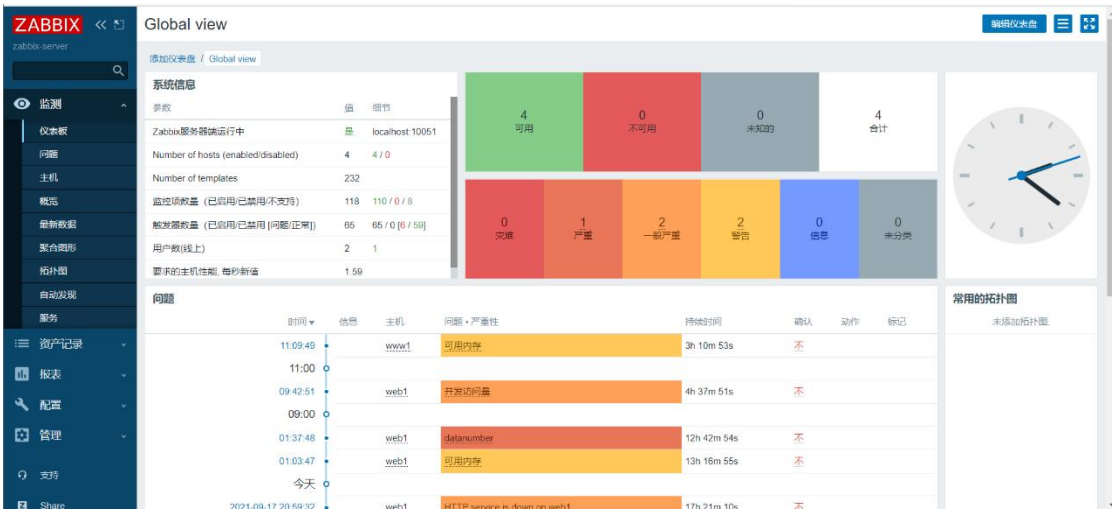
rpm -Uvh https://repo.zabbix.com/zabbix/5.0/rhel/7/x86_64/zabbix-release-5.0-1.el7.noarch.rpm
//会安装出一个 zabbix.repo
yum clean all
安装 zabbix 组件
yum install zabbix-server-mysql zabbix-agent -y //安装 zabbix 组件
安装 centos apache httpd 的组件
yum install centos-release-scl -y
修改 zabbix.repo 文件
vim /etc/yum.repos.d/zabbix.repo
[zabbix-frontend]
...
enabled=1 //指定位置换成 1
...
#安装数据库，这里 mariadb 数据库
yum install mariadb-server -y
#启动数据库，创建数据库以及导入数据库文件
systemctl satrt mariadb //安装 mariadb 数据库的，默认没有密码
mysql -uroot
mysql> create database zabbix character set utf8 collate utf8_bin;
//创建 zabbix 数据库
mysql> grant all on zabbix.* to zabbix@localhost identified by 'Qf..2021';
//授权 zabbix 用户可以操作 zabbix 数据库，且用 Qf..2021 密码
zcat /usr/share/doc/zabbix-server*/create.sql.gz | mysql -uzabbix -p'Qf..2021' -D zabbix
//登入到数据库，执行 use zabbix; show tables; 观察是否有 166 个表

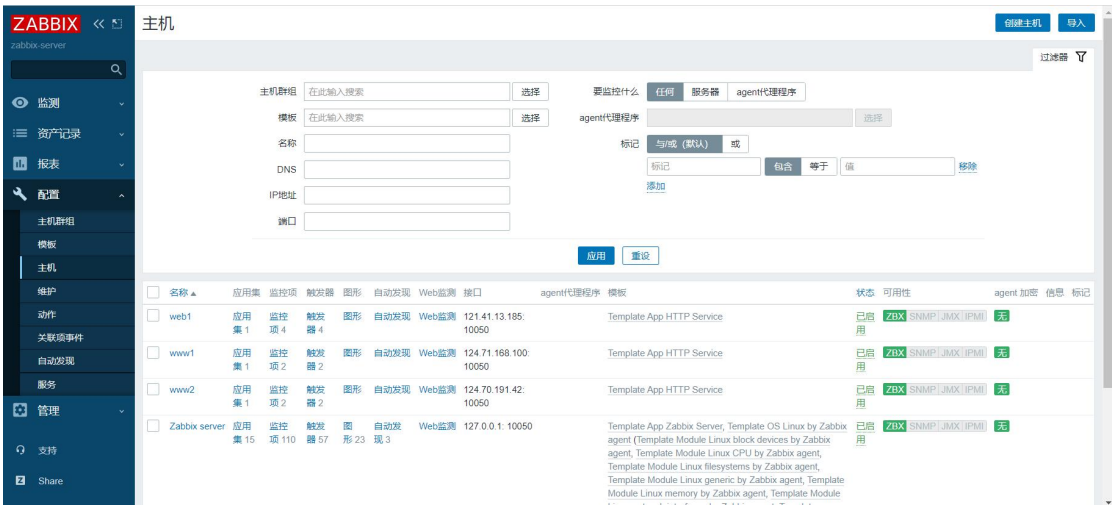
# 修改 zabbix 配置文件，配置 zabbix 跟数据库的连接
# vim /etc/zaabix/zabbix_server.conf
DBPassword=Qf..2021
//找到 DBPassword= 改为上面

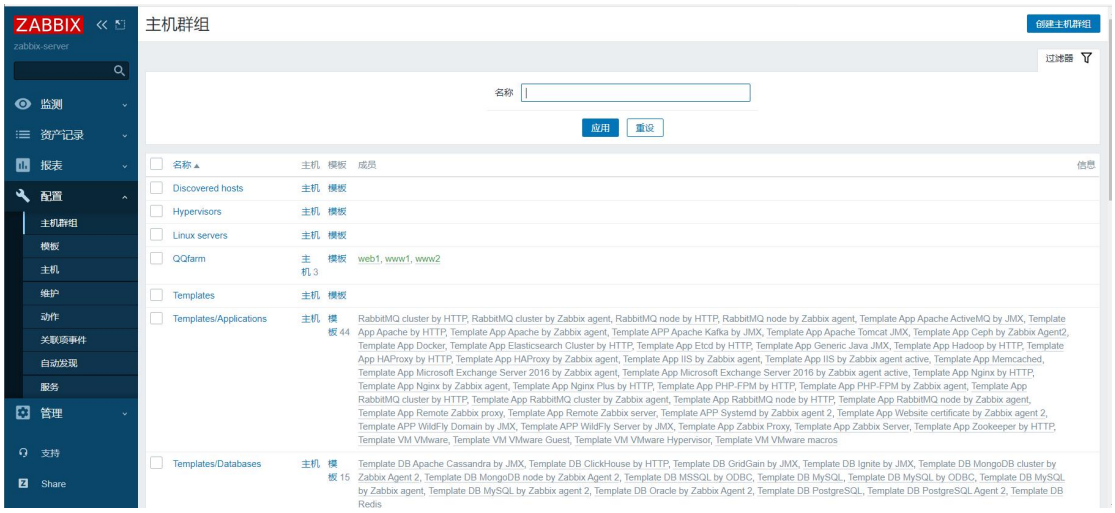
修改 php 前端配置文件，修改时区
vim /etc/opt/rh/rh-php72/php-fpm.d/zabbix.conf
原文件 ; php_value[date.timezone] = Europe/Riga 改为 php_value[date.timezone] = Asia/Shanghai
启动服务
systemctl restart zabbix-server zabbix-agent httpd rh-php72-php-fpm

systemctl enable zabbix-server zabbix-agent httpd rh-php72-php-fpm

1. 添加主机群组

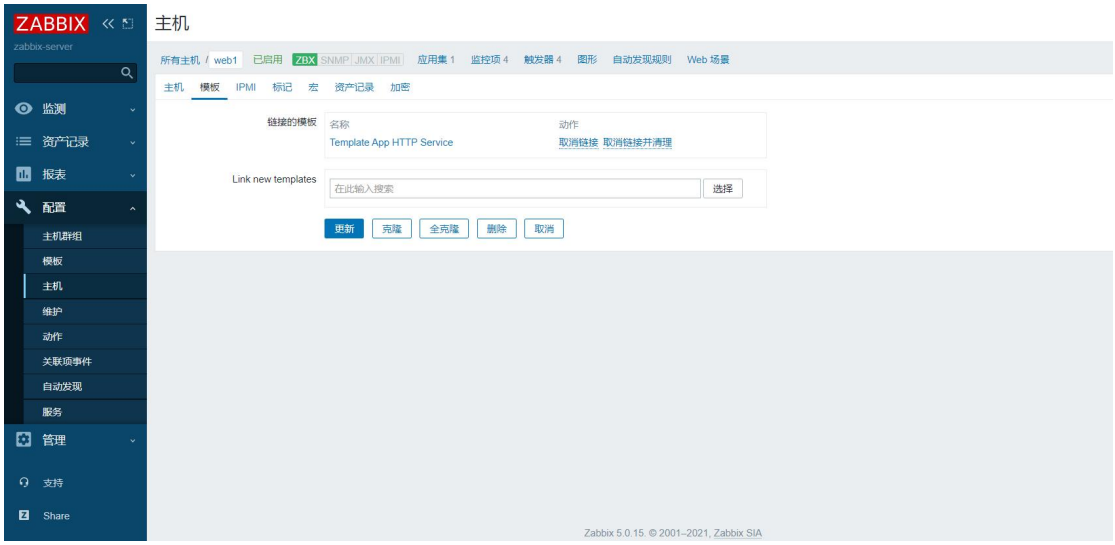




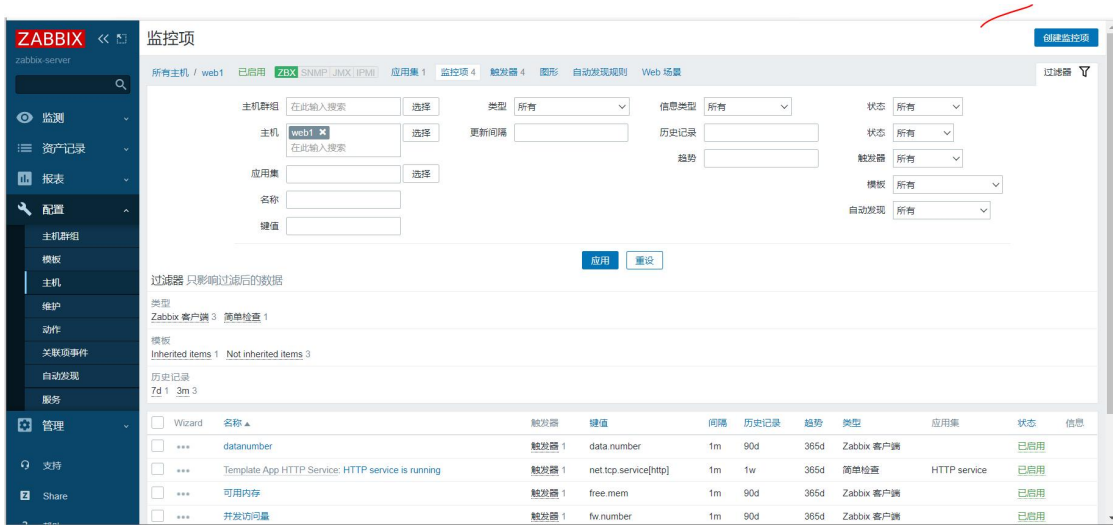


2. 创建主机

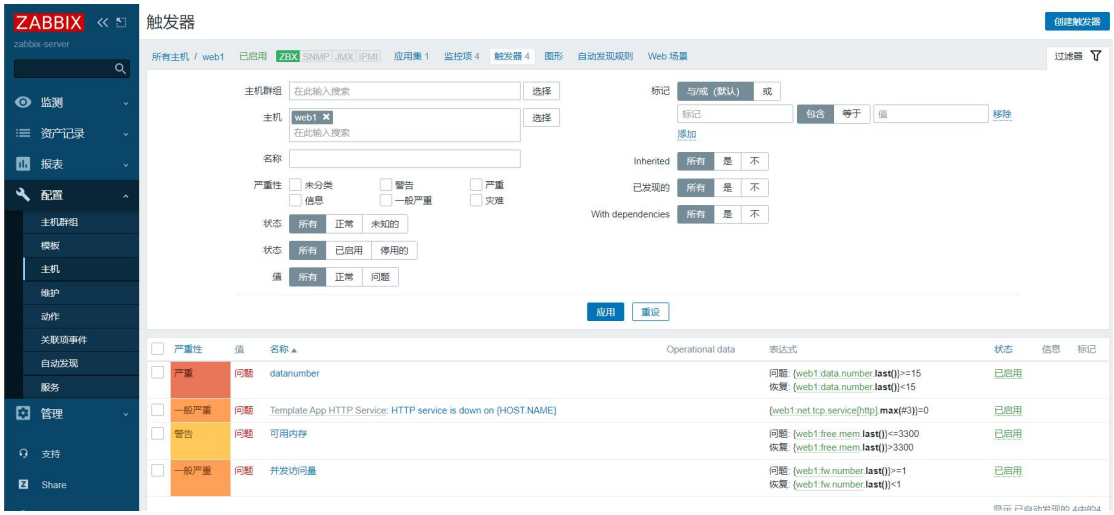
链接模板监控



创建监控项

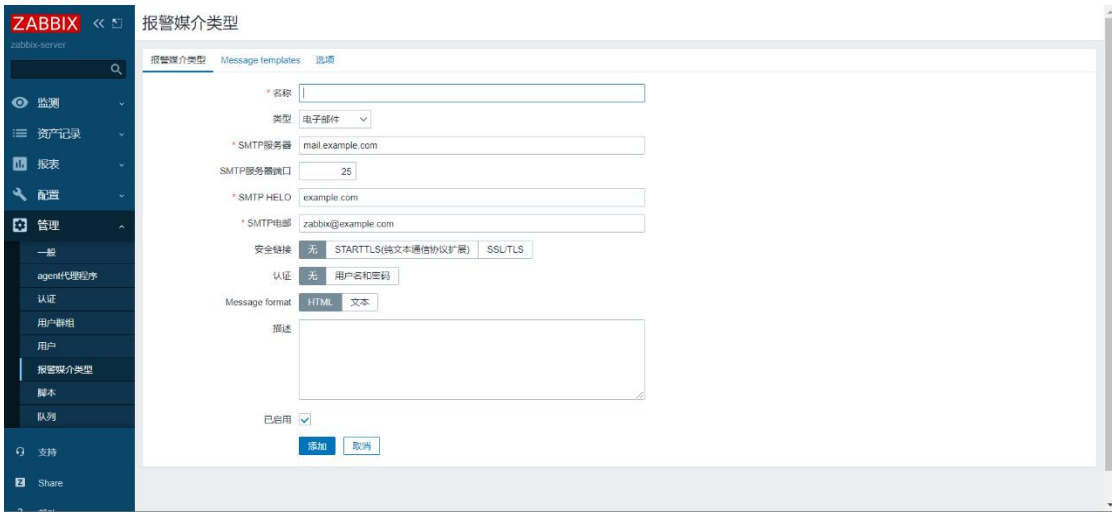


创建触发器

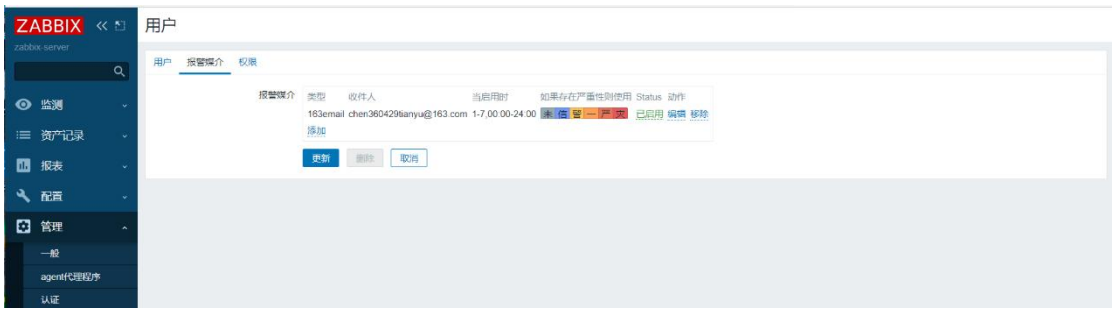


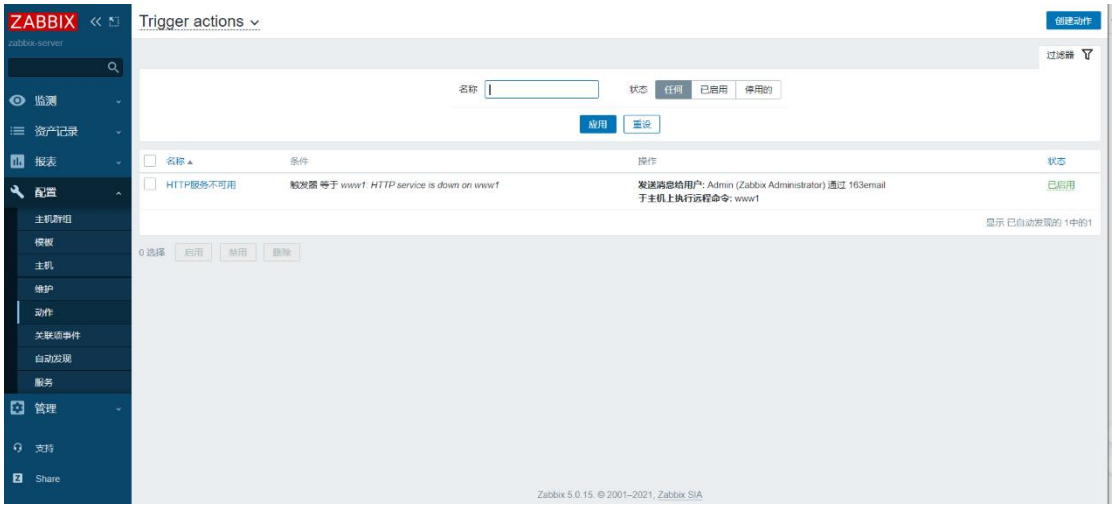
通知问题：

创建媒体类型

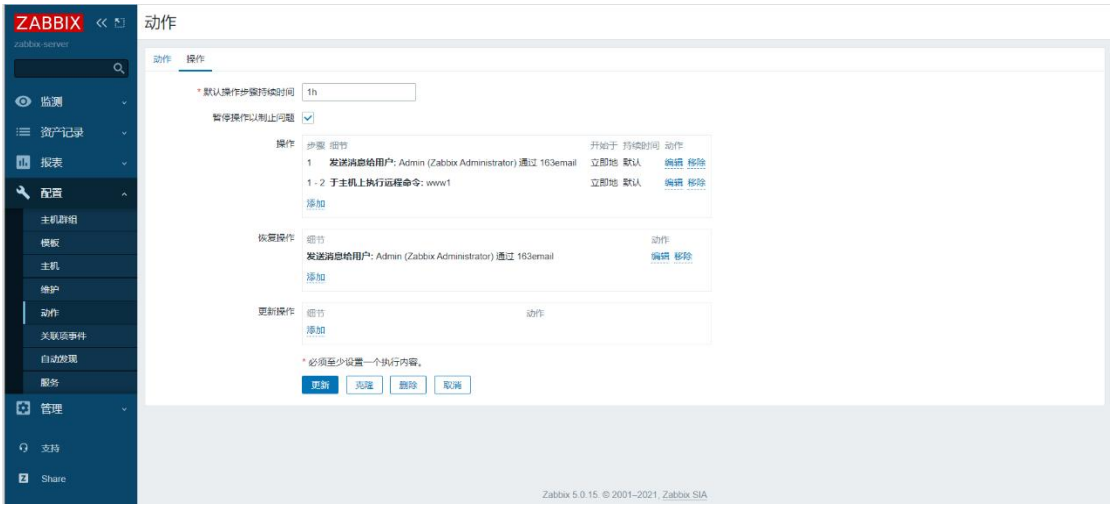


在 Admin 用户中添加媒体类型和动作-发送邮件

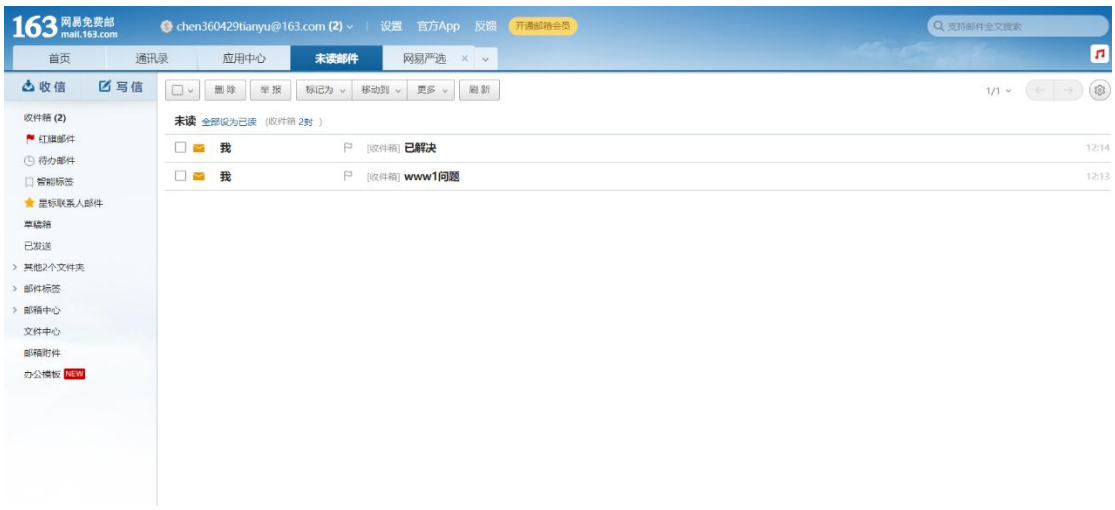




解决问题：动作-远程命令



测试结果



6. nginx

1、Nginx 安装

1. 下载 nginx 源码包

wget http://nginx.org/download/nginx-1.20.1.tar.gz

2. 安装 nginx

tar xf nginx-1.20.1.tar.gz
cd nginx-1.20.1/
yum install pcre-devel openssl-devel -y
//安装编译环境所需要的依赖
./configure --prefix=/usr/local/nginx --sbin-path=/sbin/nginx --user=nginx --group=nginx --with-http_stub_status_module --with-http_ssl_module

make && make install

3. 启动 Nginx

useradd -s /sbin/nologin -M nginx
//创建 nginx 用户管理 nginx 的进程
nginx //启动

2、Nginx 虚拟主机配置

1、配置子文件夹目录

vim /usr/local/nginx/conf/nginx.conf

在 http 块内添加以下内容
include /usr/local/nginx/conf.d/*.conf;

#mkdir /usr/local/nginx/conf.d/

2、配置创建两台虚拟主机--配置文件

vim /usr/local/nginx/conf.d/www1.conf

```
server{
        listen 80;
        server_name  www1.com;
        location / {
        index index.php index.html;
        proxy_pass http://124.70.191.42/upload/home/;

        }
}
```

vim /usr/local/nginx/conf.d/www1.conf

```
server{
        listen 80;
        server_name  www2.com;
        location / {
        index index.php index.html;
        proxy_pass http://124.71.168.100/upload/home/;

        }
}
```

3、配置负载均衡

vim /usr/local/nginx/conf.d/qqfarm.conf

```
upstream webs{
        server 124.70.191.42;
        server 124.71.168.100;
}

server{
        listen 80 default;
        server_name qqfarm.com;
        location / {
        index index.php index.html;
        proxy_pass http://webs/upload/home/;
        }


}
```