尚硅谷大数据技术之 Zabbix

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版本：V1.0

第 1 章 Zabbix 入门

1.1 Zabbix 概述

Zabbix 是一款能够监控各种网络参数以及服务器健康性和完整性的软件。Zabbix 使用灵活的通知机制，允许用户为几乎任何事件配置基于邮件的告警。这样可以快速反馈服务器的问题。基于已存储的数据，Zabbix 提供了出色的报告和数据可视化功能。

第 2 章 Zabbix 安装之 server 节点

2.1 集群规划

节点	服务
hadoop102	zabbix-server、zabbix-agent、MySQL
hadoop103	zabbix-agent
hadoop104	zabbix-agent

2.2 准备工作

2.2.1 关闭防火墙（已关闭）

```
sudo service iptables stop
sudo chkconfig iptables off
```

2.2.2 关闭 SELinux

1) 修改配置文件/etc/selinux/config

```
sudo vim /etc/selinux/config

# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#     enforcing - SELinux security policy is enforced.
#     permissive - SELinux prints warnings instead of enforcing.
#     disabled - No SELinux policy is loaded.
SELINUX=disabled
# SELINUXTYPE= can take one of these two values:
#     targeted - Targeted processes are protected,
#     mls - Multi Level Security protection.
SELINUXTYPE=targeted
```

2）重启服务器

```
sudo reboot
```

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2.3 Zabbix-server/agent 编译及安装

2.3.1 创建用户

```
sudo groupadd --system zabbix
sudo useradd --system -g zabbix -d /usr/lib/zabbix -s /sbin/nologin
-c "Zabbix Monitoring System" zabbix
```

2.3.2 上传 zabbix 安装包并解压

将安装包上传至**/opt/software** 路径并解压到当前路径

```
tar -zxvf zabbix-4.2.8.tar.gz
```

2.3.3 创建 zabbix 数据库和表

1）进入/opt/software/zabbix-4.2.8/database/mysql 路径

```
cd /opt/software/zabbix-4.2.8/database/mysql
```

2）进入 MySQL 客户端执行建表语句，并导入 zabbix 提供的 sql 脚本

```
mysql>
create database zabbix default character set utf8 collate utf8_bin;
use zabbix;
source schema.sql;
source data.sql;
source images.sql;
```

2.3.4 编译环境准备

1）上传并安装安装 MySQL 相关 rpm 包

```
sudo rpm -ivh MySQL-devel-5.6.24-1.el6.x86_64.rpm
sudo rpm -ivh MySQL-embedded-5.6.24-1.el6.x86_64.rpm
sudo rpm -ivh MySQL-shared-5.6.24-1.el6.x86_64.rpm
sudo rpm -ivh MySQL-shared-compat-5.6.24-1.el6.x86_64.rpm
```

2）安装所需依赖

```
sudo                              rpm                              -ivh
http://www.city-fan.org/ftp/contrib/yum-repo/rhel6/x86_64/city
-fan.org-release-2-1.rhel6.noarch.rpm

sudo yum-config-manager --enable city-fan.org

sudo                              rpm                              -ivh
http://dl.fedoraproject.org/pub/epel/6/x86_64/Packages/l/libng
http2-1.6.0-1.el6.1.x86_64.rpm

sudo rpm -e --nodeps libxml2-python-2.7.6-21.el6.x86_64

sudo yum install -y libcurl libcurl-devel libxml2 libxml2-devel
net-snmp-devel libevent-devel pcre-devel gcc-c++
```

2.3.5 编译及安装

1）进入/opt/software/zabbix-4.2.8 路径

```
cd /opt/software/zabbix-4.2.8
```

2）编译安装

```
./configure    --enable-server    --enable-agent    --with-mysql
--enable-ipv6 --with-net-snmp --with-libcurl --with-libxml2

sudo make install
```

2.3.6 修改配置文件

1）修改 zabbix-server 配置文件

```
sudo vim /usr/local/etc/zabbix_server.conf

DBHost=hadoop102
DBName=zabbix
DBUser=root
DBPassword=123456
```

2）修改 zabbix-agent 配置文件

```
sudo vim /usr/local/etc/zabbix_agentd.conf

Server=hadoop102
#ServerActive=127.0.0.1
#Hostname=Zabbix server
```

2.3.7 编写系统服务脚本

1）编辑 zabbix-server 文件

```
sudo vim /etc/init.d/zabbix-server
```

2）内容如下

```
#!/bin/sh
#
# chkconfig: - 85 15
# description: Zabbix server daemon
# config: /usr/local/etc/zabbix_server.conf
#

### BEGIN INIT INFO
# Provides: zabbix
# Required-Start: $local_fs $network
# Required-Stop: $local_fs $network
# Default-Start:
# Default-Stop: 0 1 2 3 4 5 6
# Short-Description: Start and stop Zabbix server
# Description: Zabbix server
### END INIT INFO

# Source function library.
. /etc/rc.d/init.d/functions

if [ -x /usr/local/sbin/zabbix_server ]; then
    exec=/usr/local/sbin/zabbix_server
else
    exit 5
fi
```

```
prog=zabbix_server
conf=/usr/local/etc/zabbix_server.conf
pidfile=/tmp/zabbix_server.pid
timeout=10

if [ -f /etc/sysconfig/zabbix-server ]; then
    . /etc/sysconfig/zabbix-server
fi

lockfile=/var/lock/subsys/zabbix-server

start()
{
    echo -n $"Starting Zabbix server: "
    daemon $exec -c $conf
    rv=$?
    echo
    [ $rv -eq 0 ] && touch $lockfile
    return $rv
}

stop()
{
    echo -n $"Shutting down Zabbix server: "
    killproc -p $pidfile -d $timeout $prog
    rv=$?
    echo
    [ $rv -eq 0 ] && rm -f $lockfile
    return $rv
}

restart()
{
    stop
    start
}

case "$1" in
    start|stop|restart)
        $1
        ;;
    force-reload)
        restart
        ;;
    status)
        status -p $pidfile $prog
        ;;
    try-restart|condrestart)
        if status $prog >/dev/null ; then
            restart
        fi
        ;;
    reload)
        action $"Service ${0##*/} does not support the reload action:
" /bin/false
        exit 3
        ;;
    *)
```

```
    echo                          $"Usage:                          $0
{start|stop|status|restart|try-restart|force-reload}"
    exit 2
    ;;
esac
```

3）加执行权限

```
sudo chmod +x /etc/init.d/zabbix-server
```

4）编辑 zabbix-agent 文件

```
sudo vim /etc/init.d/zabbix-agent
```

5）内容如下

```
#!/bin/sh
#
# chkconfig: - 86 14
# description: Zabbix agent daemon
# processname: zabbix_agentd
# config: /usr/local/etc/zabbix_agentd.conf
#

### BEGIN INIT INFO
# Provides: zabbix-agent
# Required-Start: $local_fs $network
# Required-Stop: $local_fs $network
# Should-Start: zabbix zabbix-proxy
# Should-Stop: zabbix zabbix-proxy
# Default-Start:
# Default-Stop: 0 1 2 3 4 5 6
# Short-Description: Start and stop Zabbix agent
# Description: Zabbix agent
### END INIT INFO

# Source function library.
. /etc/rc.d/init.d/functions

if [ -x /usr/local/sbin/zabbix_agentd ]; then
    exec=/usr/local/sbin/zabbix_agentd
else
    exit 5
fi

prog=zabbix_agentd
conf=/usr/local/etc/zabbix_agentd.conf
pidfile=/tmp/zabbix_agentd.pid
timeout=10

if [ -f /etc/sysconfig/zabbix-agent ]; then
    . /etc/sysconfig/zabbix-agent
fi

lockfile=/var/lock/subsys/zabbix-agent

start()
{
    echo -n $"Starting Zabbix agent: "
    daemon $exec -c $conf
    rv=$?
```

```
    echo
    [ $rv -eq 0 ] && touch $lockfile
    return $rv
}

stop()
{
    echo -n $"Shutting down Zabbix agent: "
    killproc -p $pidfile -d $timeout $prog
    rv=$?
    echo
    [ $rv -eq 0 ] && rm -f $lockfile
    return $rv
}

restart()
{
    stop
    start
}

case "$1" in
    start|stop|restart)
        $1
        ;;
    force-reload)
        restart
        ;;
    status)
        status -p $pidfile $prog
        ;;
    try-restart|condrestart)
        if status $prog >/dev/null ; then
            restart
        fi
        ;;
    reload)
        action $"Service ${0##*/} does not support the reload action:
" /bin/false
        exit 3
        ;;
    *)
    echo                          $"Usage:                          $0
{start|stop|status|restart|try-restart|force-reload}"
    exit 2
    ;;
esac
```

6）加执行权限

```
sudo chmod +x /etc/init.d/zabbix-agent
```

2.4 部署 Zabbix-web

2.4.1 部署 httpd

1）安装 httpd

```
sudo yum -y install httpd
```

2）修改 httpd 配置文件

```
sudo vim /etc/httpd/conf/httpd.conf
```

将以下红色部分放至改配置文件的对应位置

```
317 <Directory "/var/www/html">
318
319 #
320 # Possible values for the Options directive are "None", "All",
321 # or any combination of:
322 #   Indexes Includes FollowSymLinks SymLinksifOwnerMatch ExecCGI MultiViews
323 #
324 # Note that "MultiViews" must be named *explicitly* --- "Options All"
325 # doesn't give it to you.
326 #
327 # The Options directive is both complicated and important.  Please see
328 # http://httpd.apache.org/docs/2.2/mod/core.html#options
329 # for more information.
330 #
331    Options Indexes FollowSymLinks
332
333 #
334 # AllowOverride controls what directives may be placed in .htaccess files.
335 # It can be "All", "None", or any combination of the keywords:
336 #   Options FileInfo AuthConfig Limit
337 #
338    AllowOverride None
339
340 #
341 # Controls who can get stuff from this server.
342 #
343    Order allow,deny
344    Allow from all
345    <IfModule mod_php5.c>
346       php_value max_execution_time 300
347       php_value memory_limit 128M
348       php_value post_max_size 16M
349       php_value upload_max_filesize 2M
350       php_value max_input_time 300
351       php_value max_input_vars 10000
352       php_value always_populate_raw_post_data -1
353       php_value date.timezone Asia/Shanghai
354    </IfModule>
355
356 </Directory>
```

3）拷贝 zabbix-web 的 php 文件到 httpd 的指定目录

```
sudo mkdir /var/www/html/zabbix
sudo    cp    -a    /opt/software/zabbix-4.2.8/frontends/php/*
/var/www/html/zabbix/
```

2.4.2 安装 php5.6

1）安装 yum 源

```
wget
http://dl.fedoraproject.org/pub/epel/6/x86_64/epel-release-6-8.
noarch.rpm

wget
```

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```
http://rpms.famillecollet.com/enterprise/remi-release-6.rpm

sudo rpm -ivh epel-release-6-8.noarch.rpm remi-release-6.rpm
```

2）激活 yum 源

```
sudo yum-config-manager --enable remi-php56
```

3）安装 php 及相关组件

```
sudo yum install -y php php-bcmath php-mbstring php-xmlwriter
php-xmlreader php-mcrypt php-cli php-gd php-curl php-mysql
php-ldap php-zip php-fileinfo
```

2.5 Zabbix 启动

2.5.1 启动 Zabbix-Server

1）启动

```
sudo service zabbix-server start
```

2）开机自启

```
sudo chkconfig --add zabbix-server
sudo chkconfig zabbix-server on
```

2.5.2 启动 Zabbix-Agent

1）启动

```
sudo service zabbix-agent start
```

2）开机自启

```
sudo chkconfig --add zabbix-agent
sudo chkconfig zabbix-agent on
```

2.5.3 启动 Zabbix-Web（httpd）

1）启动

```
sudo service httpd start
```

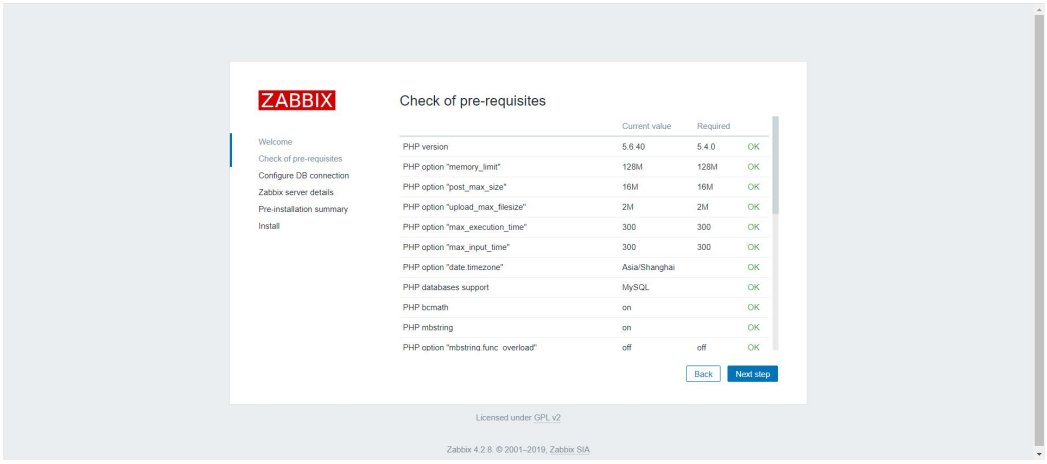
2）开机自启

```
sudo chkconfig httpd on
```

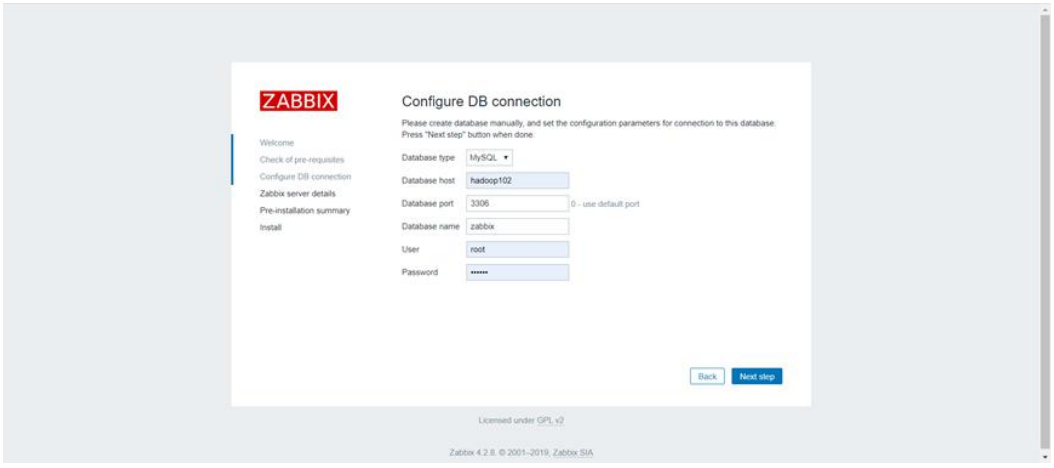
2.6 Zabbix 登录

1）浏览器访问 http://hadoop102/zabbix

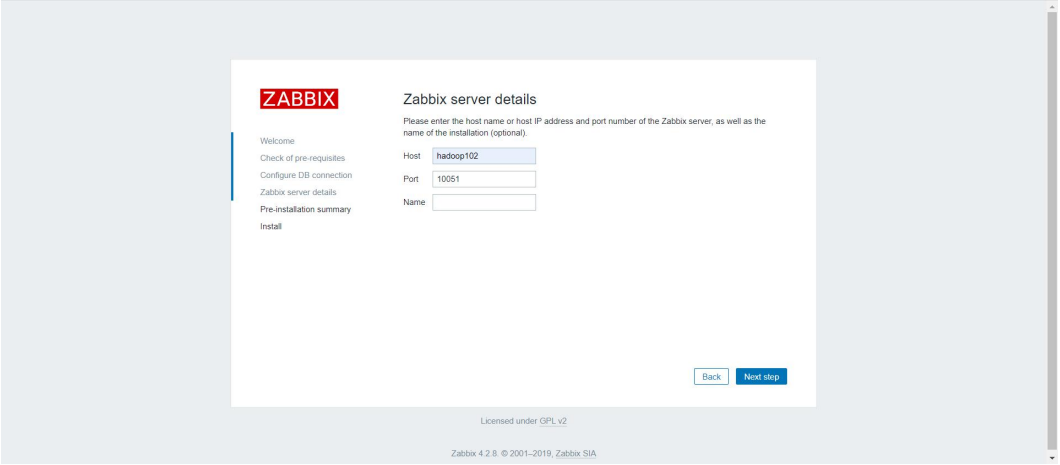
2）检查配置



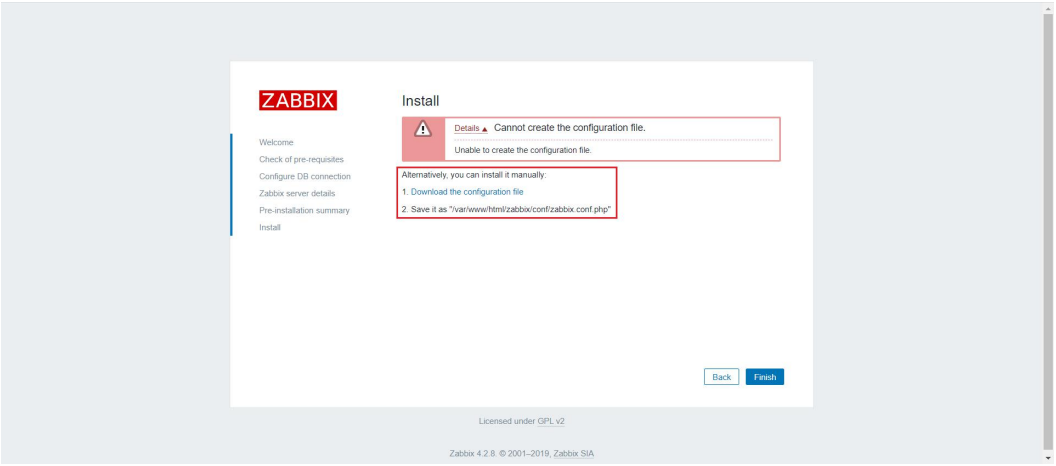
3）配置数据库



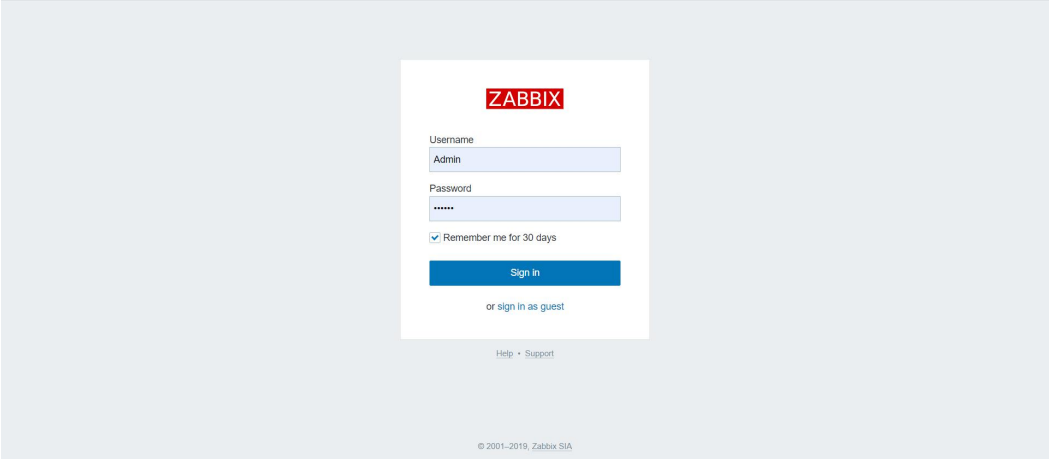
4）配置 zabbix-server



5）下载配置文件，并上传至指定路径



6）登录，用户名：Admin，密码 zabbix



第 3 章 Zabbix 安装之 agent 节点

3.1 创建用户

```
sudo groupadd --system zabbix
```

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```
sudo useradd --system -g zabbix -d /usr/lib/zabbix -s /sbin/nologin
-c "Zabbix Monitoring System" zabbix
```

3.2 编译环境准备

```
sudo yum -y install gcc-c++ pcre-devel
```

3.3 解压 Zabbix 安装包

将安装包上传至**/opt/software** 路径并解压到当前路径

```
tar -zxvf zabbix-4.2.8.tar.gz
```

3.4 编译及安装

1）进入/opt/software/zabbix-4.2.8 路径，执行以下编译安装命令

```
./configure --enable-agent
sudo make install
```

2）修改 zabbix-agent 配置文件

```
sudo vim /usr/local/etc/zabbix_agentd.conf

Server=hadoop102
#ServerActive=127.0.0.1
#Hostname=Zabbix server
```

3.5 编辑系统服务脚本

1）编辑 zabbix-agent 文件

```
sudo vim /etc/init.d/zabbix-agent
```

2）内容如下

```
#!/bin/sh
#
# chkconfig: - 86 14
# description: Zabbix agent daemon
# processname: zabbix_agentd
# config: /usr/local/etc/zabbix_agentd.conf
#

### BEGIN INIT INFO
# Provides: zabbix-agent
# Required-Start: $local_fs $network
# Required-Stop: $local_fs $network
# Should-Start: zabbix zabbix-proxy
# Should-Stop: zabbix zabbix-proxy
# Default-Start:
# Default-Stop: 0 1 2 3 4 5 6
# Short-Description: Start and stop Zabbix agent
# Description: Zabbix agent
### END INIT INFO

# Source function library.
. /etc/rc.d/init.d/functions

if [ -x /usr/local/sbin/zabbix_agentd ]; then
    exec=/usr/local/sbin/zabbix_agentd
```

```
else
    exit 5
fi

prog=zabbix_agentd
conf=/usr/local/etc/zabbix_agentd.conf
pidfile=/tmp/zabbix_agentd.pid
timeout=10

if [ -f /etc/sysconfig/zabbix-agent ]; then
    . /etc/sysconfig/zabbix-agent
fi

lockfile=/var/lock/subsys/zabbix-agent

start()
{
    echo -n $"Starting Zabbix agent: "
    daemon $exec -c $conf
    rv=$?
    echo
    [ $rv -eq 0 ] && touch $lockfile
    return $rv
}

stop()
{
    echo -n $"Shutting down Zabbix agent: "
    killproc -p $pidfile -d $timeout $prog
    rv=$?
    echo
    [ $rv -eq 0 ] && rm -f $lockfile
    return $rv
}

restart()
{
    stop
    start
}

case "$1" in
    start|stop|restart)
        $1
        ;;
    force-reload)
        restart
        ;;
    status)
        status -p $pidfile $prog
        ;;
    try-restart|condrestart)
        if status $prog >/dev/null ; then
            restart
        fi
        ;;
    reload)
        action $"Service ${0##*/} does not support the reload action:
```

```
" /bin/false
        exit 3
        ;;
    *)
    echo                          $"Usage:                          $0
{start|stop|status|restart|try-restart|force-reload}"
    exit 2
    ;;
esac
```

3）加执行权限

```
sudo chmod +x /etc/init.d/zabbix-agent
```

3.6 启动 Zabbix-Agent

1）启动

```
sudo service zabbix-agent start
```

2）开机自启

```
sudo chkconfig --add zabbix-agent
sudo chkconfig zabbix-agent on
```

第 4 章 Zabbix 使用

4.1 Zabbix 逻辑概念

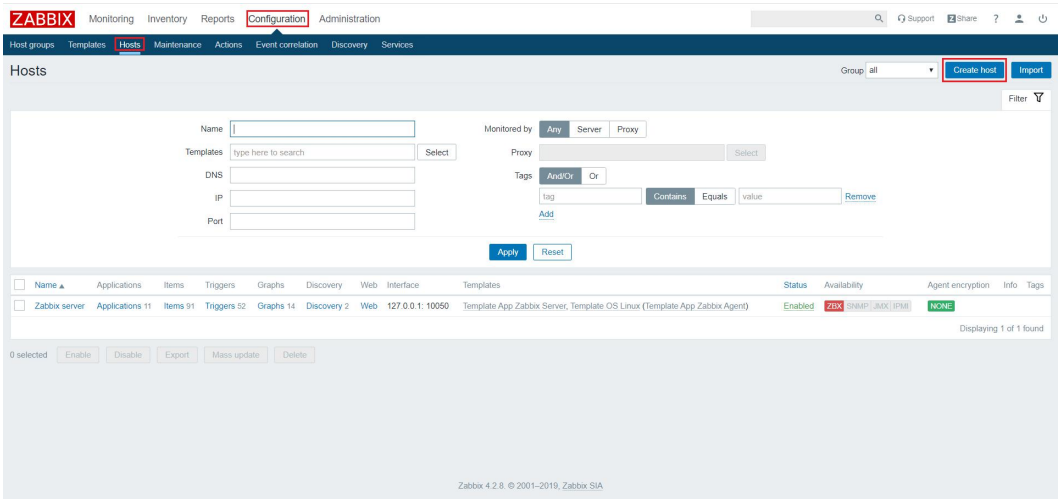
3.1.1 Host

3.2.1 Item

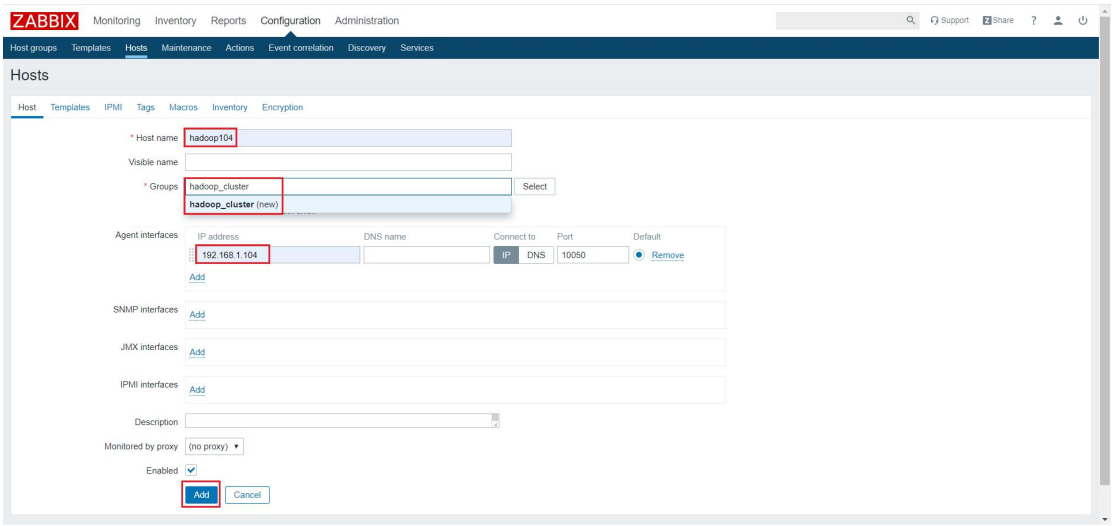
4.2 Zabbix 实战

4.2.1 创建 Host

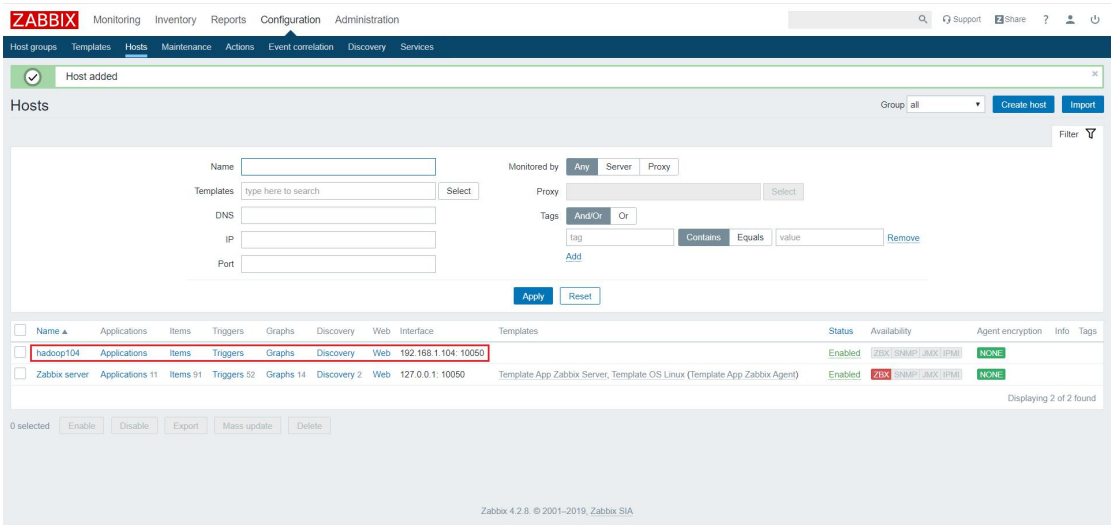
1）点击 Configuration/Hosts/Create host



2）配置 Host

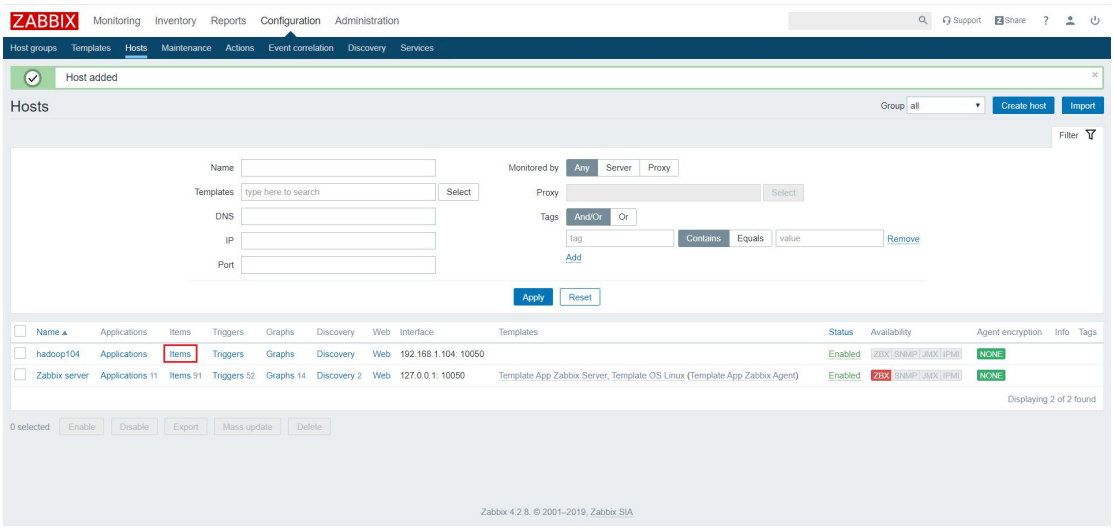


3）查看新增 Host

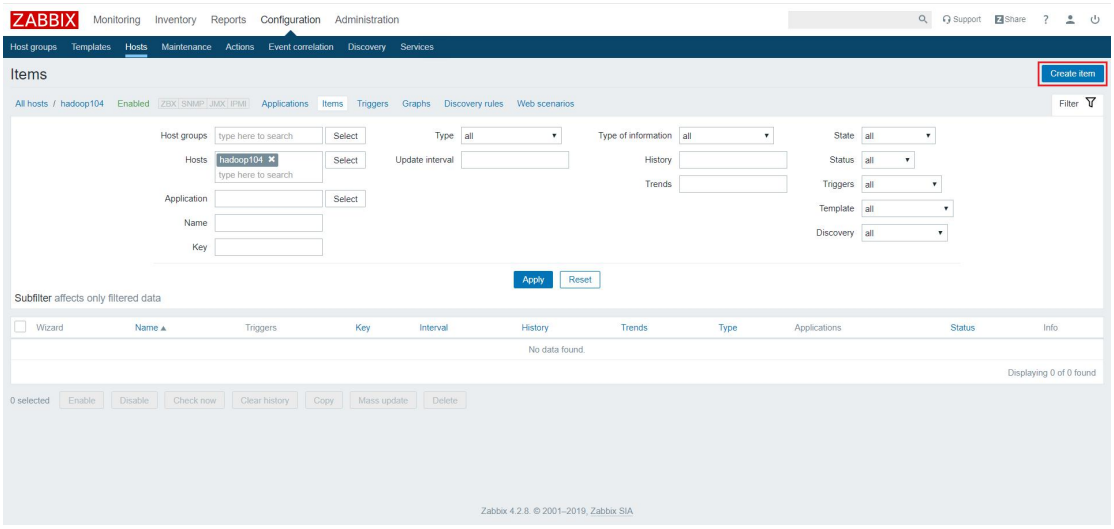


4.2.2 创建 Item

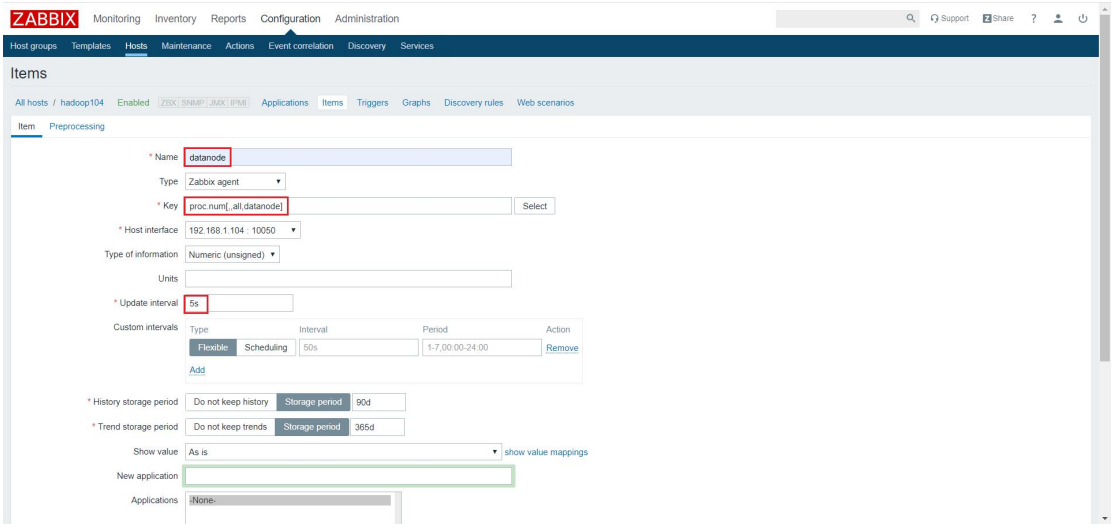
1）点击 Items



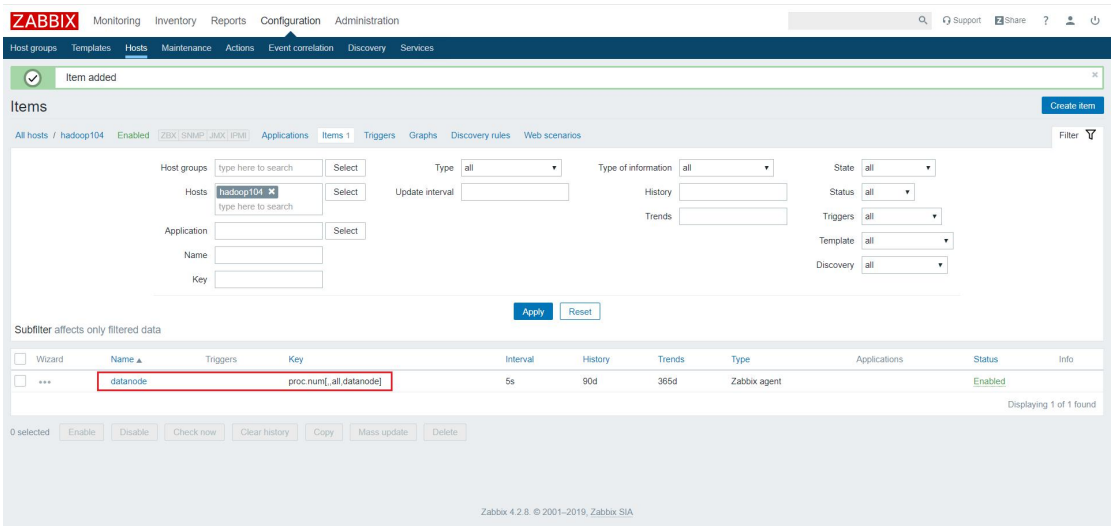
2）点击 Create item



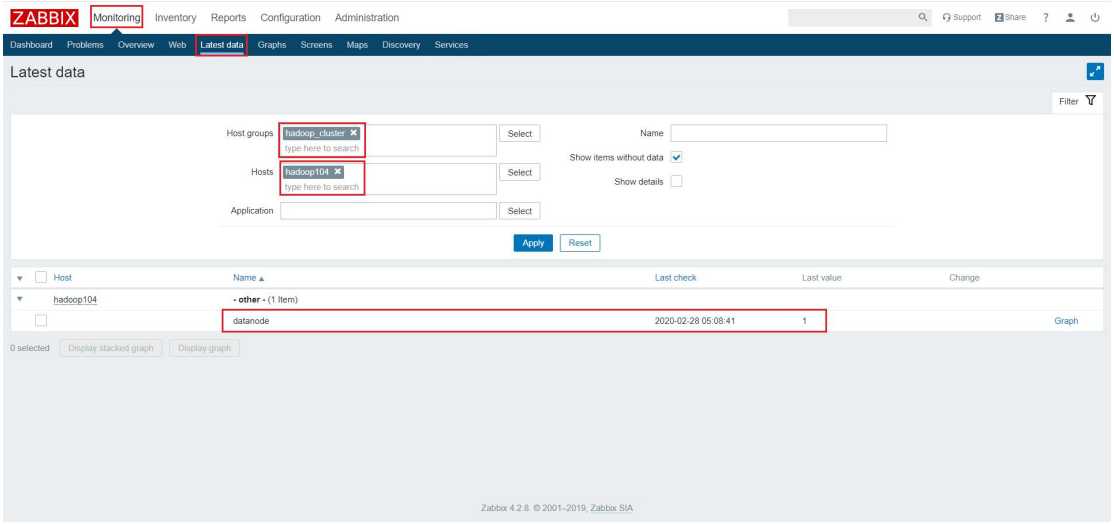
3）配置 Item



4）查看创建的 Item

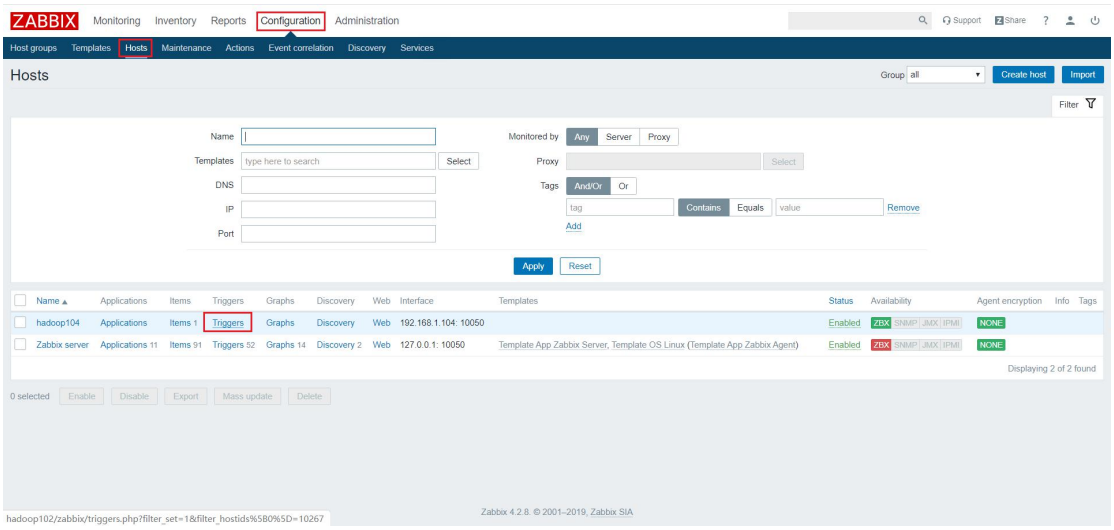


5）查看 Item 最新数据



4.2.3 创建 Trigger

1）点击 Conguration/Hosts/Triggers



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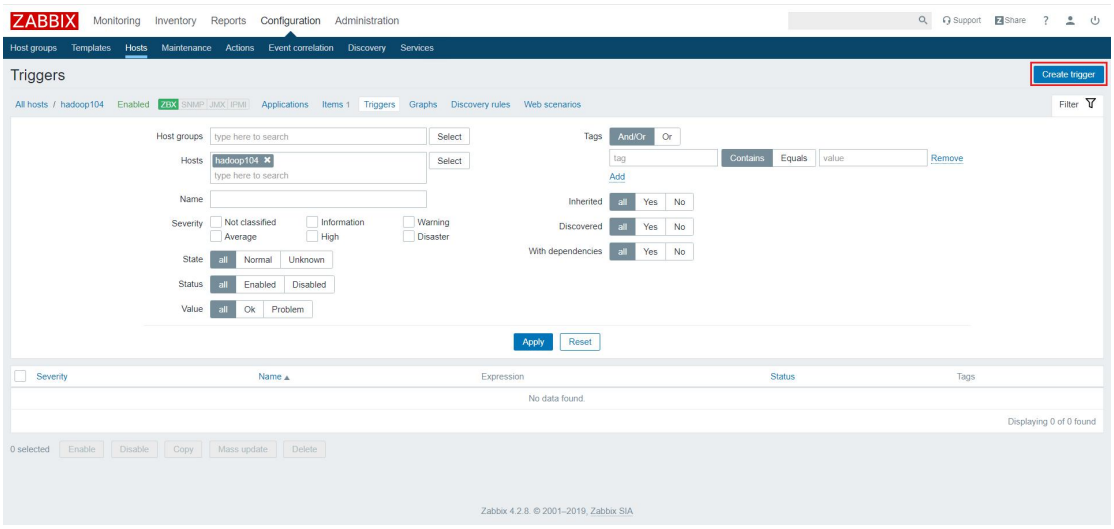
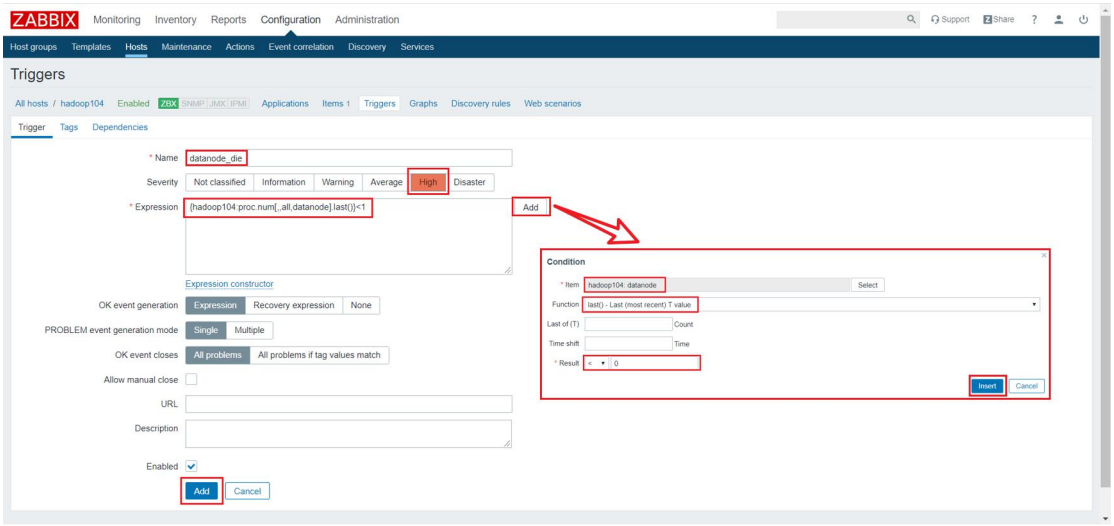
2）点击 Create Trigger

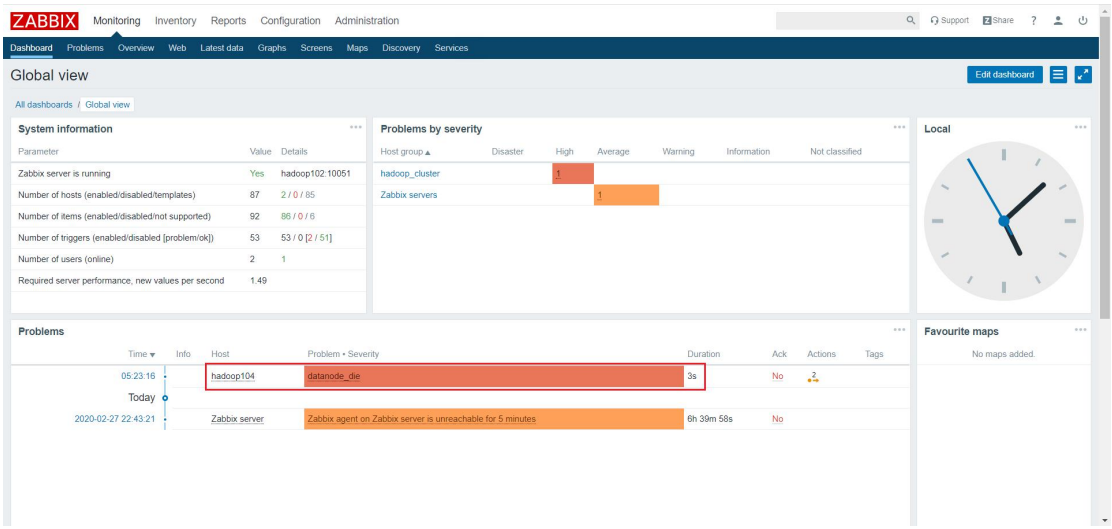


3）编辑 Trigger



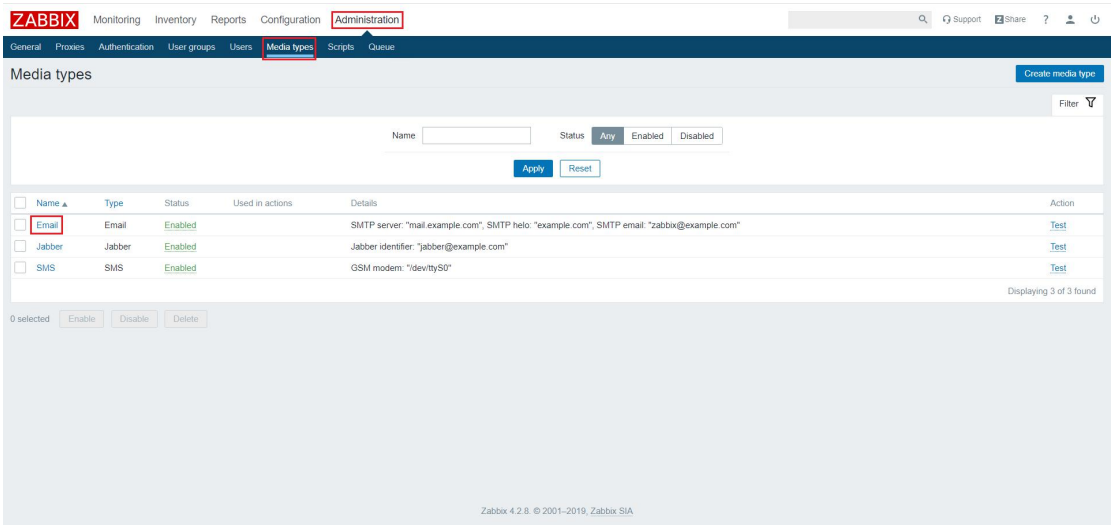
4）测试 Trigger

关闭集群中的 HDFS，会有如下效果

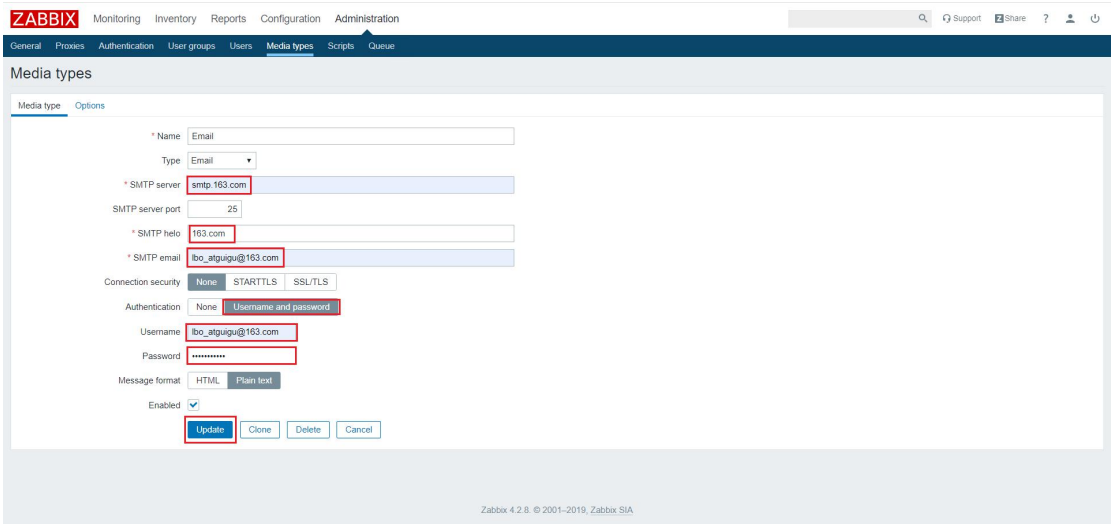


4.2.4 创建 Media type

1）点击 Administration/Media types/Email



2）编辑 Email



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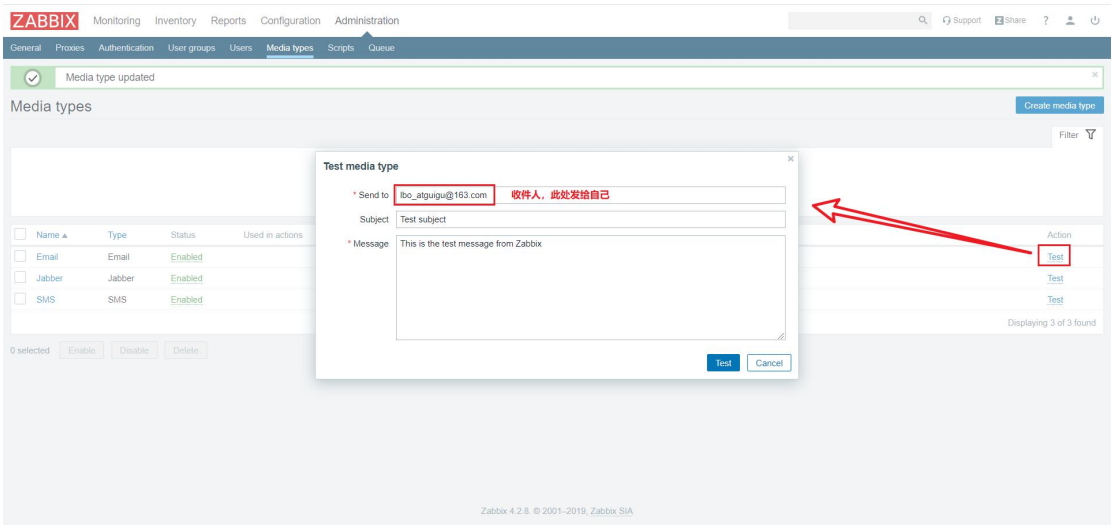
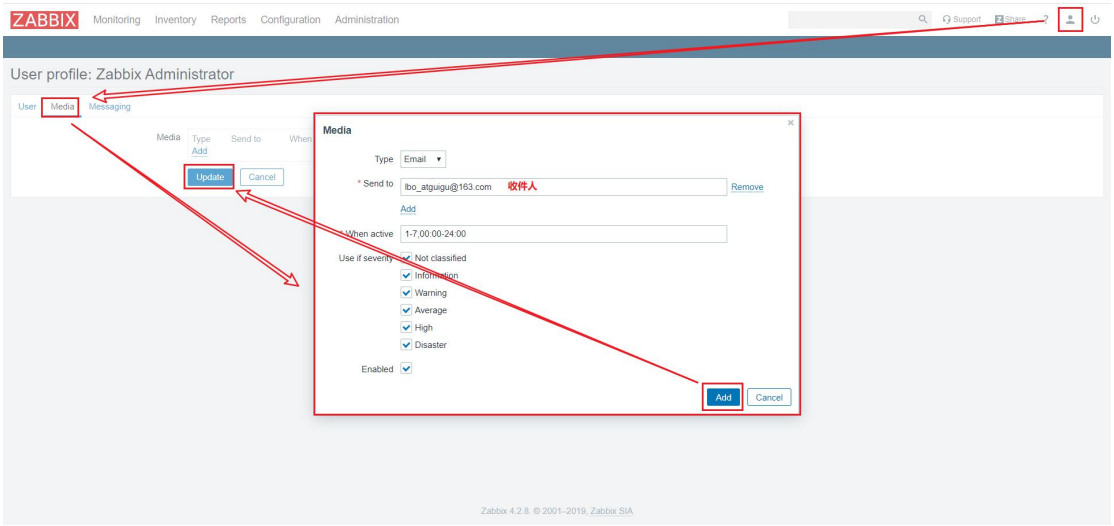
3）测试 Email

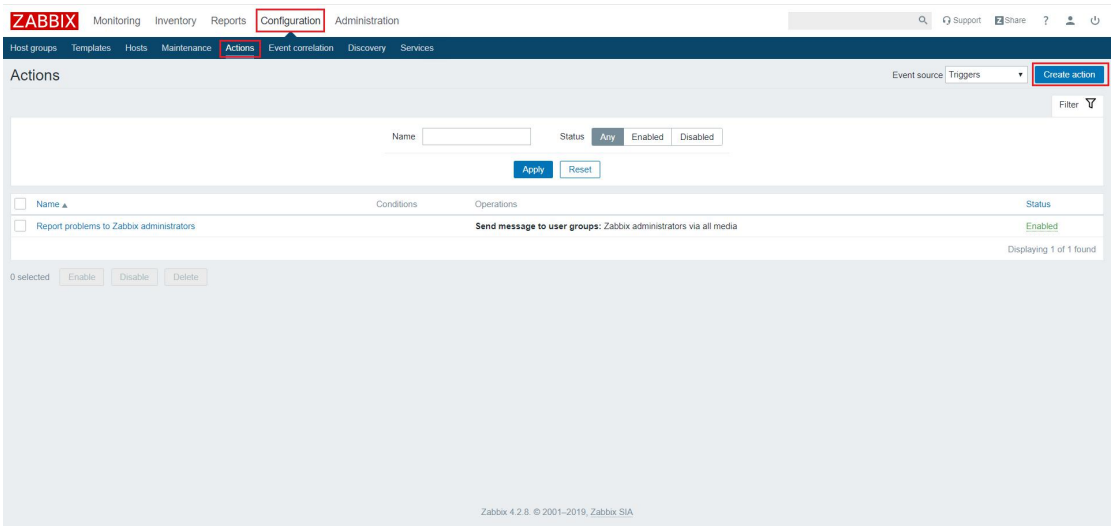


4）Email 绑定收件人

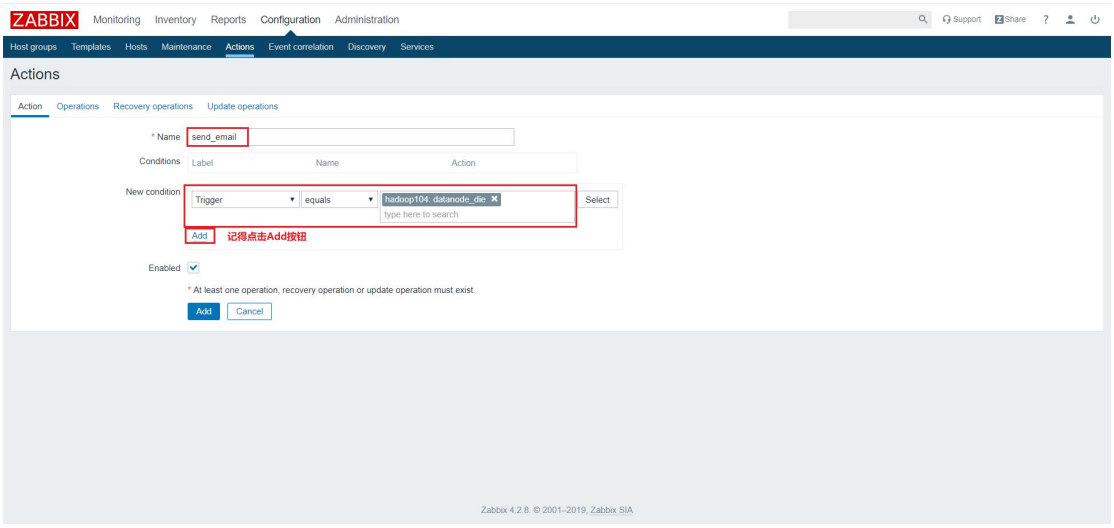


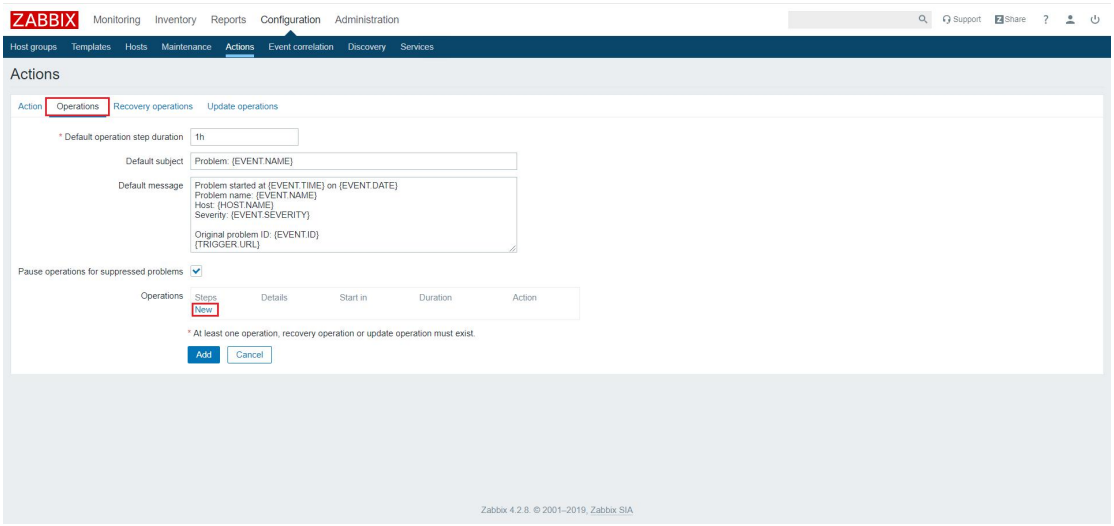
4.2.4 创建 Action

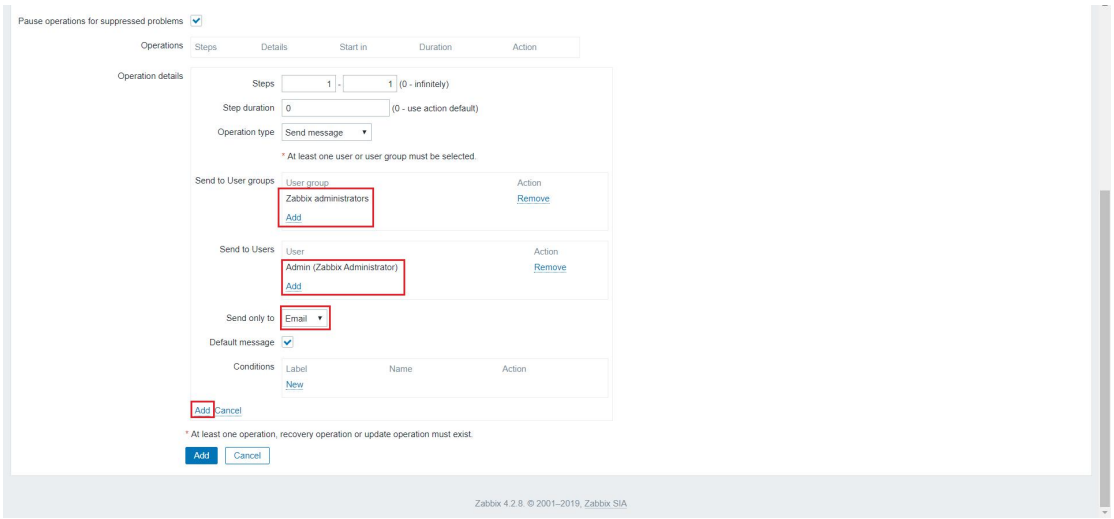
1）点击 Configuration/Actions/Create action

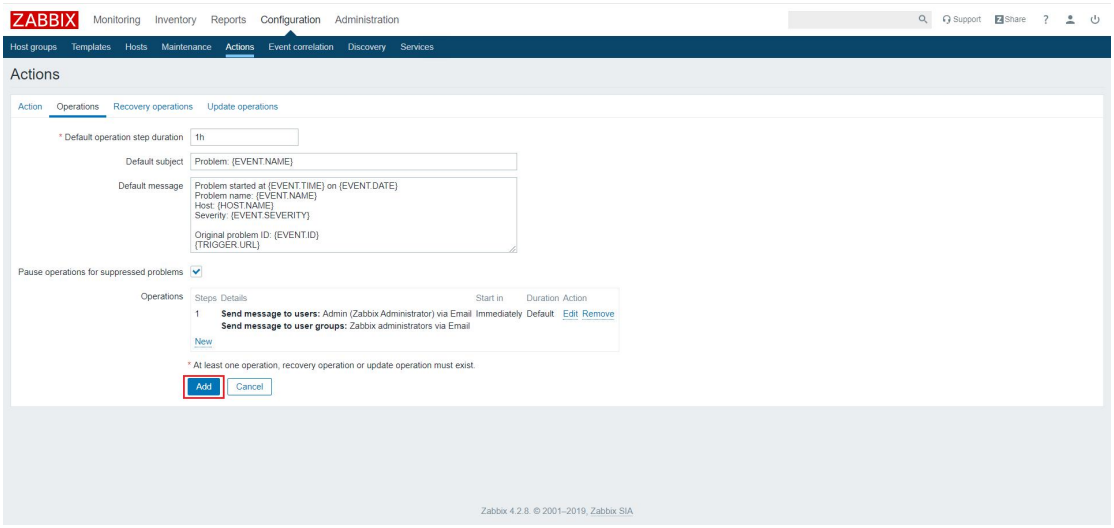

ZABBIX
Monitoring
Inventory
Reports
Configuration
Administration
Host groups
Templates
Hosts
Maintenance
Actions
Event correlation
Discovery
Services
Actions
Event source
Triggers
Create action
Filter
Name
Status
Any
Enabled
Disabled
Apply
Reset
Name
Conditions
Operations
Status
Report problems to Zabbix administrators
Send message to user groups: Zabbix administrators via all media
Enabled
Displaying 1 of 1 found
0 selected
Enable
Disable
Delete
Zabbix 4.2.8. © 2001–2019, Zabbix SIA

2）编辑 Action


ZABBIX
Monitoring
Inventory
Reports
Configuration
Administration
Host groups
Templates
Hosts
Maintenance
Actions
Event correlation
Discovery
Services
Actions
Action
Operations
Recovery operations
Update operations
* Name
send_email
Conditions
Label
Name
Action
New condition
Trigger
equals
hadoop104: datanode_die
type here to search
Select
Add
记得点击Add按钮
Enabled
* At least one operation, recovery operation or update operation must exist.
Add
Cancel
Zabbix 4.2.8. © 2001–2019, Zabbix SIA


ZABBIX
Monitoring
Inventory
Reports
Configuration
Administration
Host groups
Templates
Hosts
Maintenance
Actions
Event correlation
Discovery
Services
Actions
Action
Operations
Recovery operations
Update operations
* Default operation step duration
1h
Default subject
Problem: {EVENT.NAME}
Default message
Problem started at {EVENT.TIME} on {EVENT.DATE}
Problem name: {EVENT.NAME}
Host: {HOST.NAME}
Severity: {EVENT.SEVERITY}
Original problem ID: {EVENT.ID}
{TRIGGER.URL}
Pause operations for suppressed problems
Operations
Steps
Details
Start in
Duration
Action
New
* At least one operation, recovery operation or update operation must exist.
Add
Cancel
Zabbix 4.2.8. © 2001–2019, Zabbix SIA





3）测试

重新启动 HDFS，再关闭 HDFS 时，即可收到邮件通知