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表15-1   硬件配置

应 用 名 称	操 作 系 统	CPU	内 存	硬 盘
Zabbix-Server	RHEL 6.5 x64	8核心	DDR3 16GB	SATA 500GB´2 RAID1
Zabbix-DB	RHEL 6.5 x64	24核心	DDR3 64GB	SAS 300GB´4 RAD1+0
Zabbix-GUI	RHEL 6.5 x64	4核心	DDR3 4GB	SATA 500GB
Zabbix-Proxy	RHEL 6.5 x64	8核心	DDR3 16GB	SAS 300GB´2 RAID1

表15-2   各服务器的IP地址规划

应 用 名 称	角 色	IP地址		
物理IP地址	虚拟IP地址	公网IP地址		
Zabbix-Server	主服务器	192.168.0.3	192.168.0.5	58.75.2.89
Zabbix-Server	从服务器	192.168.0.4		
Zabbix-DB	MySQL数据库主库	192.168.0.240	无	无
Zabbix-DB	MySQL数据库从库	192.168.0.241		
Zabbix-GUI	前端管理界面	192.168.0.2	无	无
Zabbix-Proxy	代理节点	10.10.10.2	无	61.61.52.9
Zabbix-Agent	被监控端	10.10.10.10	无	无

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表15-3   Zabbix的数据库规划

角 色	IP地址	域 名	运行的服务
MySQL-Master	192.168.0.240	zabbix-mysql-master.itnihao.com	MySQL服务
MySQL-Slave	192.168.0.241	zabbix-mysql-slave.itnihao.com	MySQL服务

```
shell# rpm -ivh http://repo.mysql.com/yum/mysql-8.0-community/el/7/x86_64/
mysql80-community-release-el7-1.noarch.rpm
Shell# yum install mysql-community-server
```

```
shell# vim  /etc/my.cnf
[mysqld]
datadir=/var/lib/mysql
socket=/var/lib/mysql/mysql.sock
user=mysql

symbolic-links=0
character-set-server=utf8   #设置字符集为UTF-8
innodb_file_per_table=1     #让InnoDB的每个表文件单独存储
innodb_data_file_path=ibdata1:10M:autoextend
server_id=1 #从库设置为非1

[mysqld_safe]
log-error=/var/log/mysqld.log
pid-file=/var/run/mysqld/mysqld.pid
```

更多配置可参考https://github.com/zabbix-book/MySQL_conf

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```
shell# systemctl  start mysqld
```

```
shell# MysqlPassword=admin@2018ABCD
shell# mysqladmin -u root password  ${MysqlPassword}
mysql> create database zabbix character set utf8;
mysql> grant all privileges on zabbix.* to zabbix@'192.168.0.2' identified  by
 'zabbix';
mysql> grant all privileges on zabbix.* to zabbix@'192.168.0.3' identified  by
 'zabbix';
mysql> grant all privileges on zabbix.* to zabbix@'192.168.0.4' identified  by
 'zabbix';
mysql> grant all privileges on zabbix.* to zabbix@'192.168.0.5' identified  by
 'zabbix';
mysql> grant all privileges on zabbix.* to zabbix@'127.0.0.1' identified  by
 'zabbix';
mysql> flush privileges;
```

```
shell# cd /usr/share/doc/zabbix-server-mysql-4.0.0   #进入对应版本的目录
shell# gunzip  create.sql.gz                          #将SQL文件解压缩
shell# mysql -uzabbix -pzabbix -h127.0.0.1            #以zabbix用户登录
mysql> use zabbix                                      #切换到zabbix库
mysql> source  /usr/share/doc/zabbix-server-mysql-4.0.0/create.sql;
```

```
shell# systemctl stop mysqld
```

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```
shell# rsync -av -e "ssh -p 22" /var/lib/mysql/ root@192.168.0.241:/var/
lib/mysql #192.168.0.241为MySQL数据库从库服务器的IP地址
```

```
shell# systemctl start mysqld
```

```
shell# mysql -uroot -p
mysql> GRANT REPLICATION CLIENT,REPLICATION SLAVE ON *.* TO
repl@'192.168.0.241.%'  IDENTIFIED BY  'zabbix_repl';
mysql> FLUSH PRIVILEGES;
```

```
mysql> show master status\G;
*************************** 1. row ***************************
            File: mysql-bin.000003
        Position: 107
    Binlog_Do_DB:
 Binlog_Ignore_DB:
Executed_Gtid_Set:
1 row in set (0.00 sec)
```

```
shell# systemctl start mysqld #启动Master节点
```

```
mysql> change master to master_host='192.168.0.240', MASTER_USER='repl',
MASTER_PASSWORD='zabbix_repl', MASTER_PORT=3306, MASTER_LOG_FILE='mysql-
bin.000003', MASTER_LOG_POS=107, MASTER_CONNECT_RETRY=10;    #107要和mater的
Position数值一致
```

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```
mysql> start slave;
```

```
mysql> show slave status\G;
```

```
*************************** 1. row ***************************
               Slave_IO_State: Waiting for master to send event
                  Master_Host: 192.168.0.240
                  Master_User: repl
                  Master_Port: 3306
                Connect_Retry: 10
              Master_Log_File: mysql-bin.000003
          Read_Master_Log_Pos: 888190
               Relay_Log_File: mysql-relay-bin.000002
                Relay_Log_Pos: 107
        Relay_Master_Log_File: mysql-bin.000003
查看如下显示是否均为YES状态
             Slave_IO_Running: Yes
            Slave_SQL_Running: YES
```

```
shell# egrep -v "^$|^#" /etc/zabbix/zabbix_server.conf
LogFile=/var/log/zabbix/zabbix_server.log
LogFileSize=0
PidFile=/var/run/zabbix/zabbix_server.pid
DBHost = zabbix-mysql-master.itnihao.com
DBName=zabbix
DBUser=zabbix
DBPassword=zabbix
DBSocket=/var/lib/mysql/mysql.sock
SNMPTrapperFile=/var/log/snmptt/snmptt.log
AlertScriptsPath=/etc/zabbix/alertscripts
ExternalScripts=/etc/zabbix/externalscripts
SourceIP=192.168.0.5   #VIP地址
```

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```
shell# yum install keepalived -y
```

/etc/keepalived/keepalived.conf 配置参考

https://github.com/zabbix-book/zabbix-HA/blob/master/keepalived.conf-master

```
# cat keepalived.conf
# https://github.com/zabbix-book/zabbix-HA
! Configuration File for keepalived

global_defs {
   notification_email {
        admin@localhost.com
   }
   notification_email_from zabbix_ha_node1@itnihao.com
   smtp_server 127.0.0.1
```

```
        smtp_connect_timeout 30
        router_id ZABBIX_NODE1
}

vrrp_script zabbix_ha {
        script "/etc/keepalived/ha_switch.sh 1 2 STATUS"
        interval 5
}

vrrp_instance VI_1 {
        state MASTER
        nopreempt
        interface eth0
        virtual_router_id 109
        priority 190
        advert_int 5
        smtp_alert

        authentication {
            auth_type PASS
            auth_pass ZABBIX_HA_ZBX_BOOK
        }

        virtual_ipaddress {
            192.168.0.5
        }

        track_script {
            zabbix_ha
        }

        notify_master /etc/keepalived/ha_switch.sh MASTER
        notify_backup /etc/keepalived/ha_switch.sh BACKUP
        notify_fault /etc/keepalived/ha_switch.sh FAULT
        notify /etc/keepalived/ha_switch.sh
}
```

https://github.com/zabbix-book/zabbix-HA/blob/master/keepalived.conf-backup

```
# cat keepalived.conf
# https://github.com/zabbix-book/zabbix-HA
! Configuration File for keepalived

global_defs {
    notification_email {
        admin@localhost.com
    }
    notification_email_from zabbix_ha_node2@itnihao.com
```

```
    smtp_server 127.0.0.1
    smtp_connect_timeout 30
    router_id ZABBIX_NODE2
}

vrrp_script zabbix_ha {
        script "/etc/keepalived/ha_switch.sh 1 2 STATUS"
        interval 5
}

vrrp_instance VI_1 {
    state BACKUP
    nopreempt
    interface eth0
    virtual_router_id 109
    priority 100
    advert_int 5
    smtp_alert

    authentication {
        auth_type PASS
        auth_pass ZABBIX_HA_ZBX_BOOK
    }

    virtual_ipaddress {
        192.168.0.5
    }

    track_script {
        zabbix_ha
    }

    notify_master /etc/keepalived/ha_switch.sh MASTER
    notify_backup /etc/keepalived/ha_switch.sh BACKUP
    notify_fault /etc/keepalived/ha_switch.sh FAULT
    notify /etc/keepalived/ha_switch.sh
}
```

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书中的脚本处理并不是最佳实践，可使用此处更新后的脚本

```
# cat ha_switch.sh
#!/bin/bash
#https://github.com/zabbix-book/zabbix-HA
#author: itnihao

STATE="$3"
```

```
ulimit -n 40960
VIP="192.168.0.5"
ZBX_SERVER="zabbix_server"
ZBX_SERVER_PID="/var/run/zabbix/zabbix_server.pid"
#SERVER_PORCESS_NUM=$(pidstat -C "zabbix_server"|grep -c "$ZBX_SERVER")

if [ -f "${ZBX_SERVER_PID}" ];then
    SERVER_PID=$(cat "${ZBX_SERVER_PID}")
else
    SERVER_PID=$(pidof "${ZBX_SERVER}")
fi

if [ "${SERVER_PID}" == "" ];then
     SERVER_PID=$(pidof "${ZBX_SERVER}")
fi

case $STATE in
    "MASTER")
        if [ "${SERVER_PID}" == ""  ];then
            systemctl start zabbix-server
        fi
        echo "MASTER" >/etc/zabbix/.ha_role
        exit 0
        ;;
    "BACKUP")
        systemctl stop zabbix-server
        killall -9 zabbix_server
        echo "BACKUP" >/etc/zabbix/.ha_role
        arping "${VIP}" -c 2
        exit 0
        ;;
    "FAULT")
        systemctl stop zabbix-server
        killall -9 zabbix_server
        exit 0
        ;;
    "STATUS")
        #echo "$(date) status">>/tmp/date.log
        ROLE=$(cat /etc/zabbix/.ha_role)
        if [ "${SERVER_PID}" == ""  ];then
            if [ "$ROLE" == "MASTER" ];then
                killall -9 "${ZBX_SERVER}" && rm -f "${ZBX_SERVER_PID}"
                systemctl start zabbix-server
                exit 0
            elif [ "$ROLE" == "BACKUP" ];then
                ps -ef |grep "/usr/sbin/zabbix_server"|grep -v "grep"|awk
'{print $2}'|xargs kill -9 && rm  -f "${ZBX_SERVER_PID}"
                systemctl stop zabbix-server
```

```
               ps -ef |grep "/usr/sbin/zabbix_server"|grep -v "grep"|awk
'{print $2}'|xargs kill -9
                if [ -f "${ZBX_SERVER_PID}" ];then
                    rm  -f "${ZBX_SERVER_PID}"
                fi
                exit 0
            else
                exit 0
            fi
        fi
        ;;
    *)
        echo "unknown state"
        exit 1
        ;;
esac
```

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```
{Template OS Linux:proc.num[].avg(5m)}>300 #进程数量
{Template OS Linux:agent.ping.nodata(5m)}=1 #由于网络抖动而引起的误报
{Template OS Linux:kernel.maxfiles.last(0)}<1024 #文件描述符，实际大于此参数值
{Template OS Linux:kernel.maxproc.last(0)}<256 #进程数，实际大于此参数值
```