10.Shell项目实战

1. `Shell` 典型应用之主机存活状态,要求判断三次,如果三次失败则失败

```
cat ping_count_3.sh
#!/usr/bin/bash

IP="192.168.70"

for i in {150..170}
do
    IP_UP=$IP.$i
    for i in {1..3}
    do
        {
        ping -c1 -W1 $IP_UP &>/dev/null
        if [ $? -eq 0 ];then
            echo $IP_UP 连接成功!
            break
        fi
        echo $IP_UP 尝试"$i"次失败!
        }&
    done
done
```

2.Shell典型应用之 `MySQL` 部署

```
cat mysql_install.sh
#!/usr/bin/bash

#1.检查是否存在mysql对应的软件包
rpm_install_mysql(){
    rpm_check_mysql=$(rpm -qa|grep mysql-community-server|wc -l)
    rpm_check_mysql_version=$(rpm -qa|grep mysql-community-server)

    if [ $rpm_check_mysql -eq 0 ];then
    cat >/etc/yum.repos.d/mysql.repo<<-EOF
        [mysql57-community]
        name=MySQL 5.7 Community Server
        baseurl=http://repo.mysql.com/yum/mysql-5.7-community/el/7/x86_64
        enabled=1
        gpgcheck=1
        gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-mysql
        EOF
        yum clean all && yum makecache
        yum install -y mysql-community-server
    else
        echo "${rpm_check_mysql_version%-*} Installed Ok"
    fi
}
#2.初始化MySQL数据库
clear_mysql(){
    systemctl start mysqld
    if [ $? -eq 0 ];then
        Mysql_old_pass=$(grep "temporary password" /var/log/mysqld.log |tail -n1|aw
k -F '[ :]' '{print $NF}')
        mysqladmin -uroot -p"$Mysql_old_pass" password "Xuliangwei.com123"
    fi
}
rpm_install_mysql
clear_mysql
```

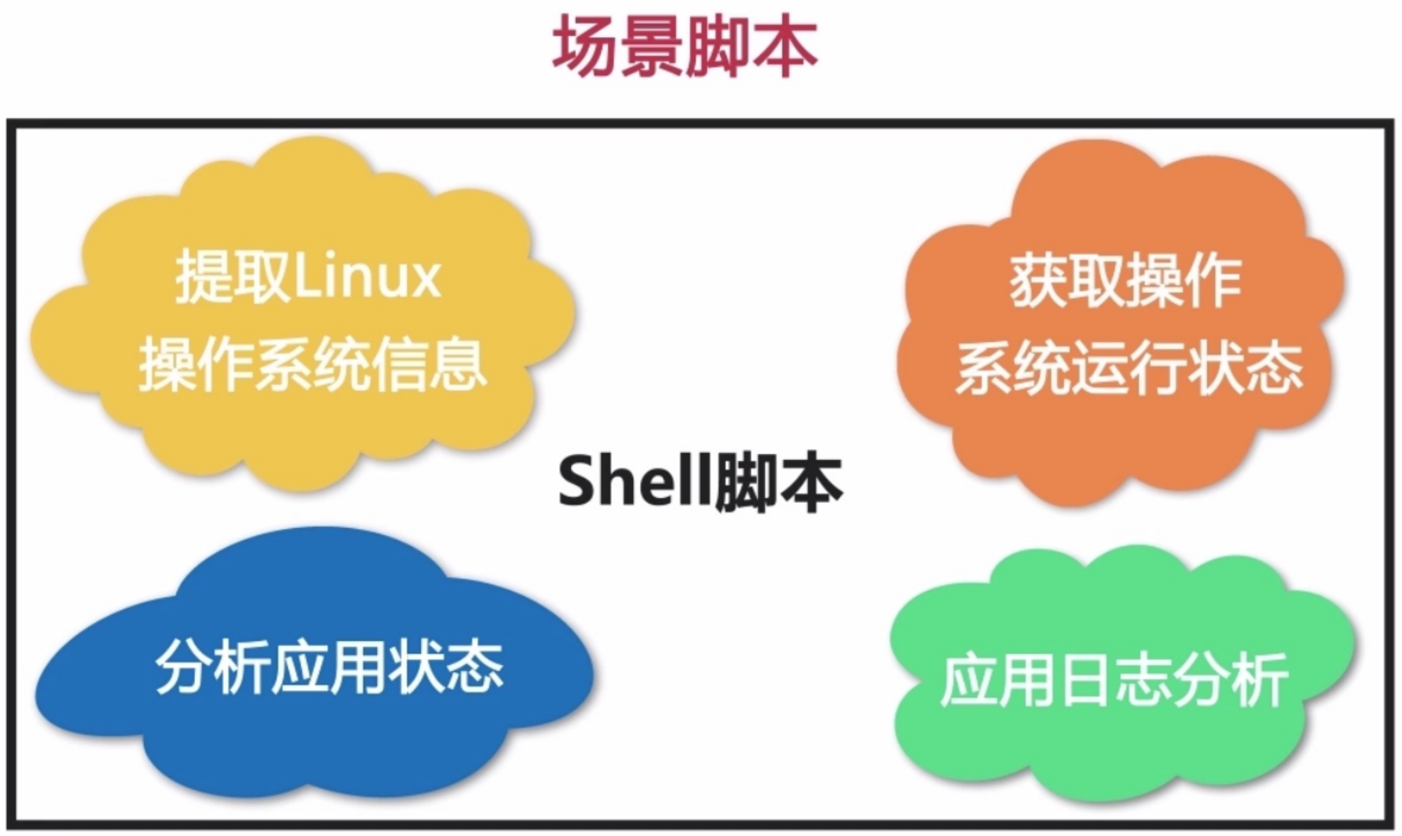
3.Shell典型应用之LNMP架构部署

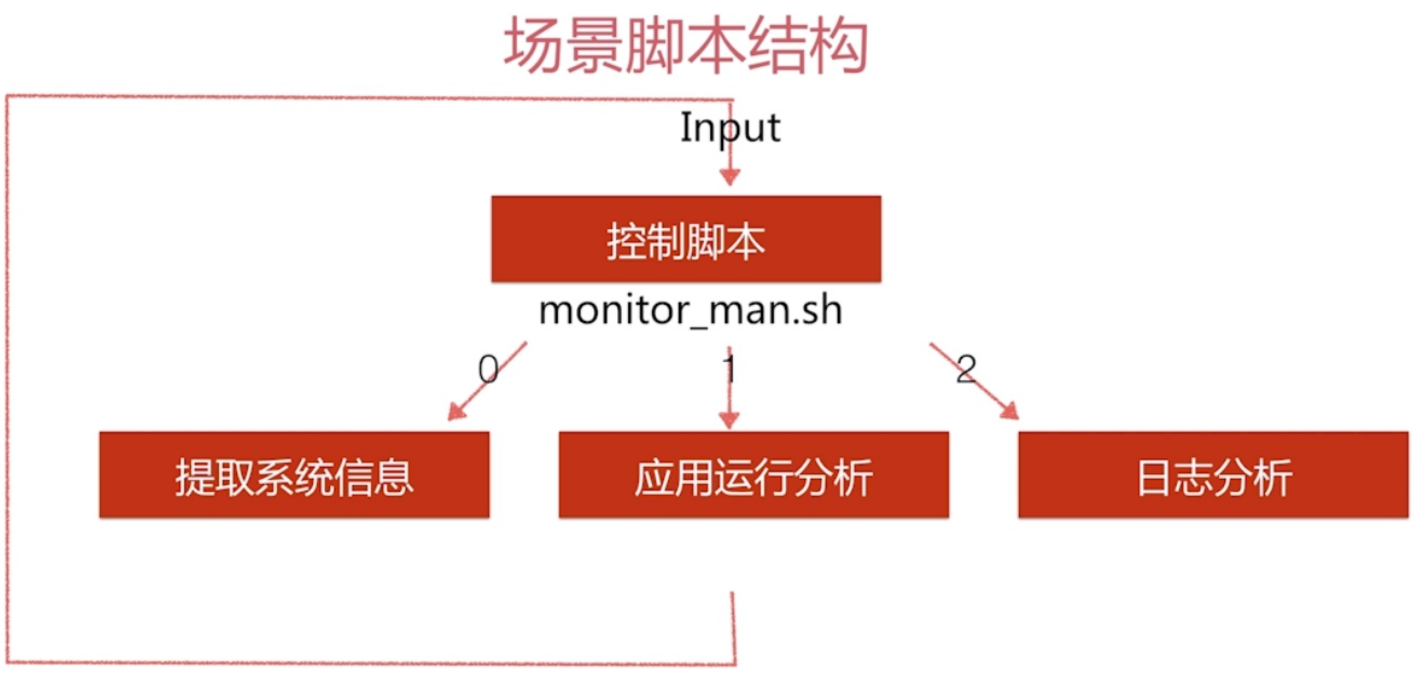
```
config目录
nginx_install.sh
php_install.sh
```

4.Shell典型应用之服务器初始化脚本

```
1.配置yum源
2.安装基础软件
yum install -y vim nc iotop iftop glances dstat telnet wget
更新系统内核、
yum update  && rm -rf /etc/yum.repos.d/CentOS*
3.调整文件描述符
/etc/security/limits.d/20-nproc.conf
* soft nproc 65535
* hard nproc 65535
* soft nofile 65535
* hard nofile 65535
4.调整时区
test -f /etc/localtime && rm -f /etc/localtime && \
ln -s /usr/share/zoneinfo/Asia/Shanghai  /etc/localtime

5.调整语言
sed -i 's#LANG=.*#LANG="en_US.UTF-8"#g' /etc/locale.conf
```

```
6.时间同步

7.调整防火墙与selinux

8.关闭ipv6
cd /etc/modprobe.d/ && touch ipv6.conf
cat >> /etc/modprobe.d/ipv6.conf << EOF
alias net-pf-10 off
alias ipv6 off
EOF

9.调整历史记录
修改为100000
grep -q 'HISTTIMEFORMAT' /etc/profile
if [ $? -eq 0 ];then
    sed -i 's/^HISTTIMEFORMAT=.*$/HISTTIMEFORMAT="%F %T"/' /etc/profile
else
    echo 'HISTTIMEFORMAT="%F %T "' >> /etc/profile
fi

10调整内核参数
cat >> /etc/sysctl.conf <<EOF
net.ipv4.tcp_tw_reuse=1
net.ipv4.tcp_tw_recycle=0
EOF
```





1.Shell典型应用之主控脚本实现

```
cat montor_main.sh
#!/usr/bin/bash
resettem=$(tput sgr0)
declare -A ssharray

i=0
numbers=""

for scripts_file in `ls -I "montor_main.sh" ./`
do
    echo -e "\e[1;35m" "The Scripts:" ${i} '==>' ${resettem} ${scripts_file}
    ssharray[$i]=${scripts_file}
    numbers="${numbers} | ${i}"
    i=$((i+1))
done
while true
do
    read -p "Please input a number [ ${numbers} ]:" execshell
    if [[ ! ${execshell} =~  ^[0-9]+ ]];then
        exit
    fi
    /usr/bin/bash ./${ssharray[$execshell]}
done
```

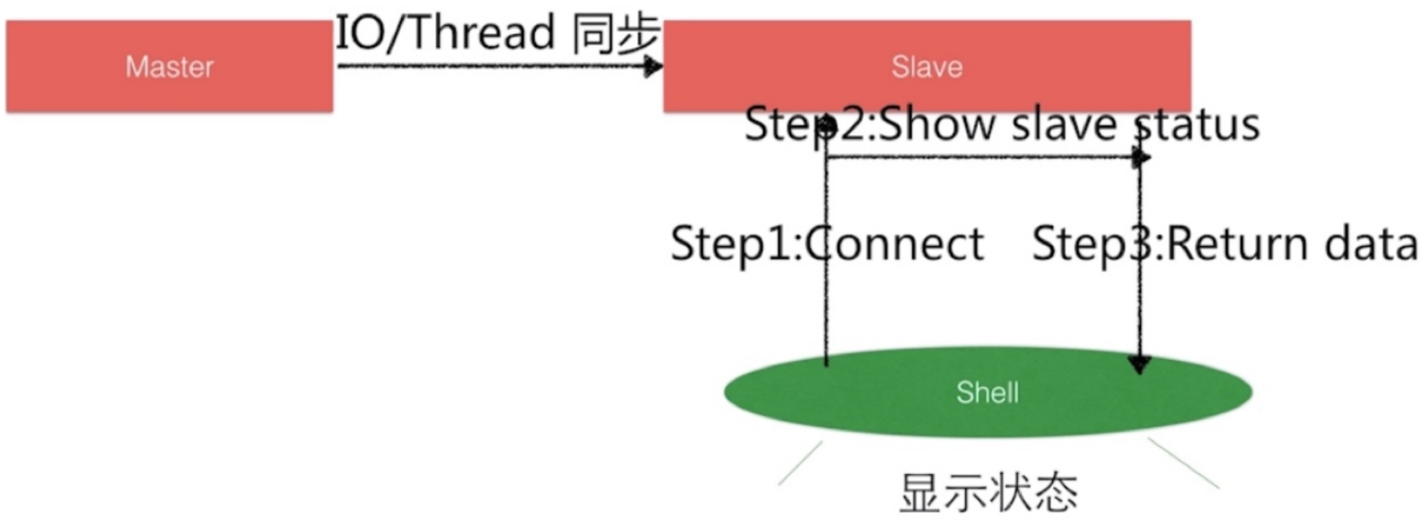
2.Shell典型应用之系统信息及运行状态获取

```
cat system_info.sh
```

```
#!/usr/bin/bash
#Program function system_info
resettem=$(tput sgr0)
# Check OS Type
    Os=$(hostnamectl |awk -F":" '/Operating System/ {print $2}')
    echo -e "\e[1;35m" "当前的系统版本-->" "${resettem}""${Os}"
# Check Kernel Release
    Os_kernel=$(hostnamectl |awk -F":" '/Kernel/ {print $2}')
    echo -e "\e[1;35m" "当前的系统内核-->" "${resettem}""${Os_kernel}"
# Check Architecture
    Os_Arch=$(hostnamectl |awk -F":" '/Architecture/ {print $2}')
    echo -e "\e[1;35m" "当前的系统平台-->" "${resettem}""${Os_Arch}"
# Check Hostname
    Os_HostName=$(hostnamectl |awk -F":" '/Static hostname/ {print $2}')
    echo -e "\e[1;35m" "当前的系统名称-->" "${resettem}""${Os_HostName}"
# Check Internal IP
    Internalip=$(hostname -I)
    echo -e "\e[1;35m" "当前的内网IP-->" "${resettem}""${Internalip}"
# Check External IP
    Externalip=$(curl -s  icanhazip.com)
    echo -e "\e[1;35m" "当前的外网IP-->" "${resettem}""${Externalip}"
# Check DNS Name
    NameServer=$(awk "/nameserver/{print $2}" /etc/resolv.conf)
    echo -e "\e[1;35m" "当前的DNS-->" "${resettem}""${NameServer}"
# Check if connected to Internet or not
    ping -c2 xuliangwei.com &>/dev/null && \
    echo -e "\e[1;35m" "当前网络畅通-->" "${resettem}""Connected" || \
    echo -e "\e[1;35m" "当前网络阻塞-->" "${resettem}""Disconnected"
# Check Logged In Users
    who>/tmp/who
    echo -e "\e[1;35m" "用户状态信息-->" "${resettem}"  && \
    cat /tmp/who && rm -f /tmp/who

# Check System Free
    system_mem_usages=$(free -mh|awk '/Mem/{print $NF}')
    echo -e "\e[1;35m" "系统可用内存-->" "${resettem}""${system_mem_usages}"
# Check System Load
    loadaverge=$(top -n 1 -b|awk '/load/{print $12,$13,$14}')
    echo -e "\e[1;35m" "系统负载状态-->" "${resettem}""${loadaverge}"
# Chkek Disk
    DiskStatus=$(df -h|awk '!/(Filesystem|tmpfs|boot)/')
    echo -e "\e[1;35m" "系统磁盘状态-->" "${resettem}""${DiskStatus}"
```

4.Shell典型应用之nginx和mysql应用状态分析

监控Mysql主从复制状态

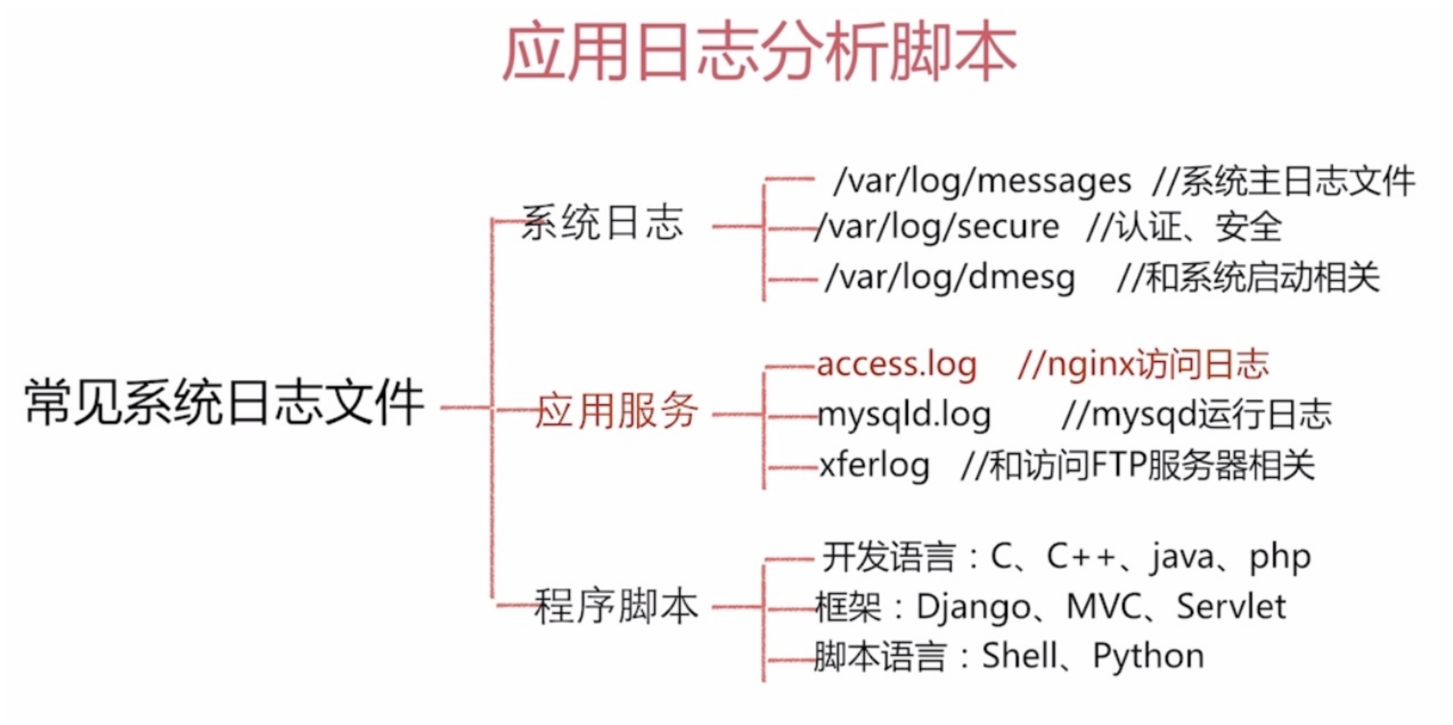


监控MySQL主从复制状态

> 1.搭建主从复制环境
> 2.基于mysql客户端连接，获取主从复制状态
> 3.使用show slave status\G;获取状态信息
> Slave_IO_Running IO线程是否有连接到主服务器上
> Seconds_Behind_Master 主从同步的延时时间

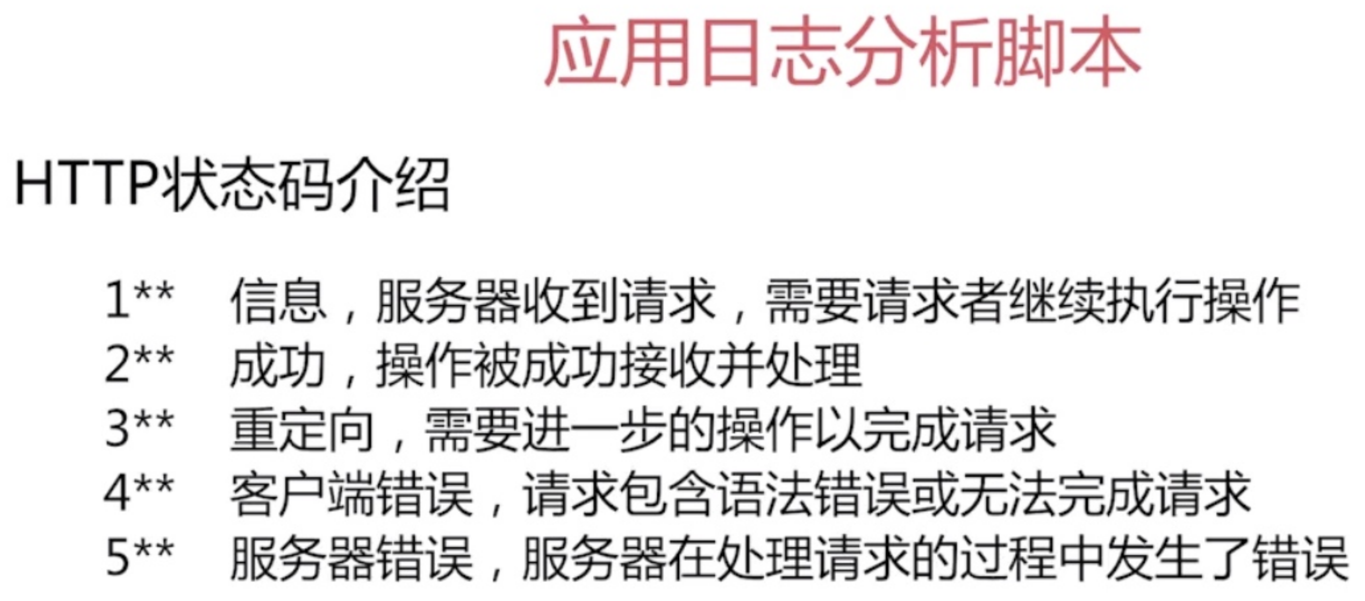
```
Check_Mysql_Server(){
    nc -z -w2 ${Mysql_Slave_Server} 3306 &>/dev/null
}
```

4.Shell典型应用之应用日志分析



应用日志分析脚本

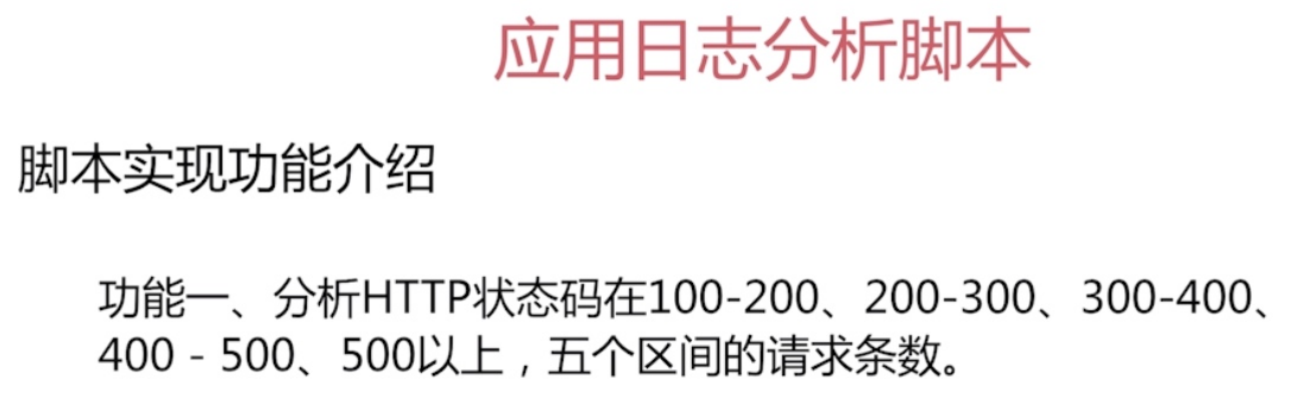
- 常见系统日志文件
  - 系统日志
    - /var/log/messages //系统主日志文件
    - /var/log/secure //认证、安全
    - /var/log/dmesg //和系统启动相关
  - 应用服务
    - access.log //nginx访问日志
    - mysqld.log //mysqd运行日志
    - xferlog //和访问FTP服务器相关
  - 程序脚本
    - 开发语言：C、C++、java、php
    - 框架：Django、MVC、Servlet
    - 脚本语言：Shell、Python



应用日志分析脚本

HTTP状态码介绍

1**	信息，服务器收到请求，需要请求者继续执行操作
2**	成功，操作被成功接收并处理
3**	重定向，需要进一步的操作以完成请求
4**	客户端错误，请求包含语法错误或无法完成请求
5**	服务器错误，服务器在处理请求的过程中发生了错误



应用日志分析脚本

脚本实现功能介绍

功能一、分析HTTP状态码在100-200、200-300、300-400、400 - 500、500以上，五个区间的请求条数。

```
cat loginfo.sh
#!/usr/bin/bash

resettem=$(tput sgr0)
```

```
Logfile=/soft/scripts/log/log.bjstack.log
Nginx_Status_code=( $(cat $Logfile |egrep -io "HTTP/1\.[0|1]\"[[:blank:]][0-9]{3}"|
awk -F "[ ]+" '{
    if($2>=100 && $2<200)
        {i++}
    else if($2>=200 && $2<300)
        {j++}
    else if($2>=300 && $2<400)
        {k++}
    else if($2>=400 && $2<500)
        {n++}
    else if($2<500)
        {p++}
    }END{ print i?i:0,j?j:0,k?k:0,n?n:0,p?p:0,i+j+k+n+p}'
        ))

echo -e "\e[1;35m" "Http Status[100+]: ""${resettem} ${Nginx_Status_code[0]}"
echo -e "\e[1;35m" "Http Status[200+]: ""${resettem} ${Nginx_Status_code[1]}"
echo -e "\e[1;35m" "Http Status[300+]: ""${resettem} ${Nginx_Status_code[2]}"
echo -e "\e[1;35m" "Http Status[400+]:""${resettem} ${Nginx_Status_code[3]}"
echo -e "\e[1;35m" "Http Status[500+]:""${resettem} ${Nginx_Status_code[4]}"
echo -e "\e[1;35m" "Http Status[Total]:""${resettem} ${Nginx_Status_code[5]}"
```