Shell Script

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Shell Script   Tomcat 状态监视脚本

```sh
#!/bin/sh

while test true ;do

    ui=$(ps x | egrep tomcat | grep -v grep | \
        awk '{print $1}')

    if [ "$ui" == ""   ] ;then

        /opt/unimas/tomcatui/bin/startup.sh
        sleep 4

    else
        echo "tomcat is running"
    fi

done
```

Shell Script

Shell Script 可以用来做什么？

- 监控应用程序的运行

Shell Script

Borealis 构建脚本

```bash
#!/bin/bash
export CVS_SANDBOX=$HOME/Workspace/borealis
export BOREALIS_HOME=$CVS_SANDBOX/polaris
source $BOREALIS_TOOL/rc

case "x$1" in
    "x" | "xhelp" )
        echo -e $HELP_TEXT
        ;;
    "xinit" )
        echo "try  source build.sh"
        ;;
    "xall" )
        cd utility/unix/
        ./build.borealis.sh
        ./build.borealis.sh -client -tool.marshal -tool.head
        cd -
        ;;
    * )
        echo "Unknow option: "$1"
        ;;
esac
```

Shell Script

Autotools 辅助脚本

```sh
#!/bin/sh

if test ! -f configure.ac; then
    echo Setup must be run from the source directory >&2
    exit 1
fi

rm  -rf  config
mkdir    config
rm -rf autom4te.cache configure config.status \
    aclocal.m4 Makefile.in

aclocal
libtoolize
autoheader
touch NEWS README AUTHORS ChangeLog
automake --add-missing
autoconf

if test -f config.status; then
    sh config.status
fi
```

Shell Script

Shell Script 可以用来做什么？

- 监控应用程序的运行
- 一键构建脚本，辅助开发，完成繁琐的操作步骤

Shell Script　　　抓取必应背景图片并设为桌面

```bash
#!/bin/bash
DOWN_DIR=$(pwd)            #  下载图片的目录
DOWN_URL="http://cn.bing.com"

cd $DOWN_DIR              # cd  到下载图片的目录去

rm -f /tmp/bing
wget -O /tmp/bing $DOWN_URL
jpg_url=$(cat /tmp/bing | grep -oi 'g_img={url:.*jpg' |\
    grep -o '/.*jpg' | sed -e  's/\\//g')

down_jpg_url=http://www.bing.com$jpg_url
wget -nc $down_jpg_url

gconftool-2 -t str –set \
    /desktop/gnome/background/picture_filename \
    $(pwd)/$(echo $jpg_url | awk -F "/" '{print $4}')

cd -     # cd  回到原来的目录
```

Shell Script

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- 监控应用程序的运行
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- 自己写些好玩的程序，帮助完成工作

Shell Script

Shell Script 可以用来做什么？

- 监控应用程序的运行
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- 自己写些好玩的程序，帮助完成工作

很多很多其他的应用

Shell Script

▶ 几个简单的例子（前面四个例子）

▶ Shell Script 基础
  ● 输入／输出流

▶ Shell Script 语法简介

Shell Script

Shell Script 基础

- Linux 有很多的实用小工具，每个小工具只做一件事
- Linux 大部分的配置文件都是以文本格式保存的

- 了解系统提供的实用小程序
- 熟悉文本处理工具

Shell Script

- 了解系统提供的实用小程序

---

cat cd chmod chown chgrp cp du df fsck
ln ls mkdir mount mv pwd rm touch

---

kill ps sleep time top

---

awk cut head less more sed sort tail
tr uniq wc xargs

---

alias basename dirname echo expr false
printf test true unset

Shell Script

- 了解系统提供的实用小程序

find grep locate whereis which

netstat ping netcat traceroute ssh wget

bc cal clear date dd file help info
size man history tee type yes uname
whatis

Shell Script

- 了解系统提供的实用小程序

---

find grep locate whereis which

---

netstat ping netcat traceroute ssh wget

---

bc cal clear date dd file help info
size man history tee type yes uname
whatis

Shell Script 更多的是一种胶水语言 (glue language)

Shell Script

- 熟悉文本处理工具

▶ cat grep sed awk tail head wc sort

▶ 正则表达式

Shell Script

▶ 几个简单的例子（前面四个例子）

▶ Shell Script 基础
  - 输入 / 输出流

▶ Shell Script 语法简介

Shell Script

- 输入 / 输出流

▶ STDIN　0

  `$ bc <<< 1+1`

▶ STDOUT　1

  `$ echo hello`

▶ STDERR　2

  `$ echo error message 1>&2`

Shell Script

- 输入 / 输出流

▶ IO Redirection

```
$ echo error message 1>&2

$ echo hello > onefile.txt

$ echo hello >> onefile.txt
```

▶ Pipeline

```
$ echo hello | grep ll
```

Shell Script

- 一个例子

```
jpg_url=$( \
    cat /tmp/bing | \
    grep -oi 'g_img={url:.*jpg' | \
    grep -o '/.*jpg' | \
    sed -e  's/\\//g' \
)
```

Shell Script

▶ 几个简单的例子（前面四个例子）

▶ Shell Script 基础
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Shell Script

- 语法简介

▶ 变量赋值

```
VAR1=message

echo $VAR1
```

▶ if 语句

```
if [ -d /home/apple ]; do

    rm -rf /home/apple

fi
```

Shell Script

- 语法简介

▶ for 语句

```
for i in 1 2 3 4; do
    echo $(($i * 2))
done
```

▶ while 语句

```
while [ 1 ]; then
    echo I am working...
done
```

Shell Script

- 语法简介

▶ case 语句

```
case "$i" in
    "1" | "2")
        echo 1
        ;;
    * )
        echo unknow...
        ;;
esac
```

Shell Script

- 语法简介

▶ 函数的定义与使用

```
foo() {
    echo $1
    echo $1
}

foo message
```

Shell Script

```sh
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while test true ;do

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    fi

done
```

```
#!/bin/sh                    至少 4 处不妥当的地方

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Shell Script　　　　　Tomcat 状态监视脚本

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ui=pgrep tomcat

Shell Script   Tomcat 状态监视脚本

```sh
#!/bin/sh

while test true ;do       死循环，耗资源

    ui=$(ps x | egrep tomcat | grep -v grep | \
        awk '{print $1}')
                                    ui=pgrep tomcat
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        /opt/unimas/tomcatui/bin/startup.sh
        sleep 4

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死循环，耗资源

ui=pgrep tomcat

没有判断是否启动成功

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死循环，耗资源

ui=pgrep tomcat

没有判断是否启动成功

仅通过进程号判断 tomcat 状态不合理

```bash
#!/bin/bash

ALIVE_URL=http://127.0.0.1:8080/alive.html
ALIVE=$(w3m -dump $ALIVE_URL)

if [ ! "$ALIVE" == "alive" ]; do
  mail -s "alert-error" hellojinjie@gmail.com \
    <<< "tomcat error, restarting tomcat"\

  /opt/bin/tomcat restart

  if [ ! "$?" == "0" ]; then
    mail -s "alert-fatal" hellojinjie@gmail.com \
      <<< "error ocurred while restarting tomcat"
  fi
fi
```

crontab
*/5 * * * * /path/to/tomcat_monitor.sh

Shell Script

- 更多的 ......

  ➤ Shell Script 有很多的语法细节

  ➤ 如何编写跨平台的脚本 ， unix,bsd,linux

  　　　sh,tcsh, bash, dash, ksh, csh

  ➤ sed & awk

  ➤ .bashrc & .bash_profile

  ➤ Errors and Signals (Traps)

  ➤ man & info

Shell Script

经典教程

Advanced Bash-Scripting Guide

Shell Script

Q & A