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????

- [Linux ?????](#)
- [RPM/YUM ????~? CentOS ??? Scientific Linux](#)
- [SHELL???????](#)
- [?????????](#)
- [?? XML ??](#)
- [?????-Regex](#)
- [?? sosreport ? script](#)
- [?????(Init Script)](#)
- [???????????????](#)
- [??????????](#)
- [????(Hex, Decimal)](#)
- [?? INI ?](#)
- [??????????? install.bin](#)
- [??????](#)
- [?????????](#)

???????

- [BASH Frequently Asked Questions](#)
- [Bourne Shell](#)
- [HowTo: Debug a Shell Script Under Linux or UNIX](#)
- sed
    - ? [Sed Command in Linux - Print Lines in a File](#)
    - ? Sed ????https://aurelio.net/projects/sedsed/
- Parse JSON data
    - ? [How to parse JSON string via command line on Linux](#)
    - ? [How to validate JSON from the command line on Linux](#)
- ?????????? - https://likegeeks.com/linux-bash-scr...e-guide-part3/
- ????
    - ? https://github.com/epety/100-shell-script-examples
    - ? [Bash scripting cheatsheet - Online](#)
- [Bash Pitfalls](#)
- [Better Bash Scripting in 15 Minutes](#)
- On-Line Tools
    - ? [ShellCheck.net](#)
    - ? [ExplainShell.com](#)
    - ? [ShortcutFoo.com](#)
    - ? curl cheat.sh/<command>
    - ? http://overapi.com/
    - ? http://bashrcgenerator.com/ , PS1 Customization

???????

cp config.txt{,.bak}

????

```
curl http://v2.wttr.in/taoyuan
curl http://wttr.in/taoyuan
```

numfmt ???????

```
$ numfmt --grouping 123456789
123,456,789

$ numfmt --from=si 2M
2000000
$ numfmt --from=iec 2M
2097152

$ numfmt --from=iec-i 2Gi
2147483648

$ numfmt --to=iec 1000000
977K
```

tr ??
?????????

```
tr -d \'
```

????????

```
TMPFILE=$(mktemp) || exit 1
echo "Our temp file is $TMPFILE"

# specify the directory
TMPFILE=$(mktemp -p /path/to/tmpdir)
echo "Our temp file is $TMPFILE"

#!/bin/bash
# Deleting the File After Script Exit
trap 'rm -f "$TMPFILE"' EXIT
TMPFILE=$(mktemp)|| exit 1
echo "Our temp file is $TMPFILE"

// ?????????
TMPFILE=$(mktmp)
TMPDIR=$(mktmp -d)
????? /tmp ?????????????????????????????????????
```

??????????????

```
cat $1 > /tmp/$1.tmp
```

```
while(true)
do
   if [[ $(diff $1 /tmp/$1.tmp) ]]
      then
         $2
         cat $1 > /tmp/$1.tmp
   fi
   sleep 2
done
```

Usage: watchdog.sh log.txt "echo hello"

????? root ????????
?? /root/.bashrc??????

echo "ALERT – Root Shell Accessed by `whoami` Login on:" `date` | mail -s "Alert: User `whoami` logged on to `hostname`" user@your.company.com

SHELL ??
// ???????? SHELL

```
#> ps -p $$
#> echo $0
#> echo $SHELL
```

// ?? SHELL ???

```
#> sh file
#> . file
#> source file
```

// ? SHELL ???????? SHELL ???
?? pipe line

echo"md5sum $X > $X.sum "| bash

?? eval

```
get_arch="uname -p"
if [ "`eval "$get_arch"`" = "i686" ]; then
....
fi
```

// ??????????????
?????

PROMPT_DIRTRIM=2

??????

```
usernames=$(cat /etc/passwd | grep bash | sed 's/:.*//g')
for user in $usernames; do
    echo "somepassword" | passwd --stdin $user
done
```

??????? --stdin?????

```
usernames=$(cat /etc/passwd | grep bash | sed 's/:.*//g')
for user in $usernames; do
    echo "$user:somepassword" | chpasswd
done
```

??????

```
cat /dev/urandom | tr -c -d '[:alnum:]' | head -c 16;echo
```

?? pipeline ??

```
command1 | command2 | commandN
```

OR

```
command1 | filter_data_command > output
```

OR

```
get_data_command | verify_data_command | process_data_command | format_data_command > output.data.file
```

??????????

```
// ???????????? Array ??
echo "${PIPESTATUS[@]}"

// ??????????????
echo "${PIPESTATUS[0]} ${PIPESTATUS[1]}"
```

Command Line ?????

-

??	??

Ctrl + a	?????????
Ctrl + e	?????????
Alt + f	??????????
Alt + b	??????????
Ctrl + d	????????????
Alt + d	????????????
Ctrl + n	???????
Ctrl + p	???????
Ctrl + u	???????????
Ctrl + k	???????????

column ??

?????

```
# (printf "DeviceName On MountPoint Type FileSystem\n";mount) | column -t
DeviceName             On MountPoint         Type FileSystem
/dev/mapper/vg_homepbx-lv_root  on  /              type  ext4       (rw)
proc                   on /proc          type proc      (rw)
sysfs                  on /sys           type sysfs     (rw)
devpts                  on /dev/pts          type devpts     (rw,gid=5,mode=620)
tmpfs                  on /dev/shm          type tmpfs     (rw)
/dev/sda1                on /boot            type ext4      (rw)
none                   on /proc/sys/fs/binfmt_misc type binfmt_misc (rw)
```

install ??

???????????? owner/group??????

/usr/bin/install -o www-data -g www-data -m 0755 -d /var/log/freegeoip

???? /proc

CPU:

cat /proc/cpuinfo

Memory:

cat /proc/meminfo

OS Version:

cat /proc/version

?? Array

- ?????${#str_list[@]}
- ?????${str_list[@]}

```bash
#!/bin/bash
str_list=("aaa" "bbb" "ccc" "ddd")
echo ${#str_list[@]}
for i in ${str_list[@]}
do
  echo "$i"
done
```

```bash
# Script to split a string based on the delimiter
my_string="Ubuntu;Linux Mint;Debian;Arch;Fedora"
IFS=';' read -ra my_array <<< "$my_string"

#Print the split string
for i in "${my_array[@]}"
do
   echo $i
done
```

```bash
# Script to split a string based on the delimiter
my_string="Ubuntu;Linux Mint;Debian;Arch;Fedora"
my_array=($(echo $my_string | tr ";" "\n"))

#Print the split string
for i in "${my_array[@]}"
do
   echo $i
done
```

mail ??
?? sender name)
?? Mutt??? CentOS 4

```
$ export EMAIL="No Reply<noreply@my.com>"
$ echo "mail body" | mutt -s "Test Mail" touser@my.com
```

?? mailx??? AIX 5.3

```
$ echo "mail body" | mailx -s "Test mail" -r noreply@my.com touser@my.com
```

???? SMTP server ??)
?? mailx ??

```
// ?? mailx
yum install mailx

// ??
$ echo "This is the message body and contains the message" | mailx -v \
> -r "someone@example.com" \
> -s "This is the subject" \
> -S smtp="mail.example.com:587" \
> -S smtp-use-starttls \
> -S smtp-auth=login \
> -S smtp-auth-user="someone@example.com" \
> -S smtp-auth-password="abc123" \
> -S ssl-verify=ignore \
> yourfriend@gmail.com
```

TIPs:

-v ???????????????

```
Resolving host smtp.gmail.com . . . done.
Connecting to 74.125.68.109:587 . . . connected.
220 mx.google.com ESMTP je4sm32812877pbd.94 - gsmtp
>>> EHLO enlightened
250-mx.google.com at your service, [122.163.43.21]
250-SIZE 35882577
250-8BITMIME
250-STARTTLS
250-ENHANCEDSTATUSCODES
250-PIPELINING
250-CHUNKING
```


?? loop ????

```
// for loop ???
$> for i in var1 var2 var3; do echo $i; done
$> for ((i=1;i<=10;i++)); do echo $i; done
$> for i in $(ls *.log); do echo $i; done

$> for t in {1..10};do  echo $t; done
1
2
3
4
5
```

```
6
7
8
9
10

$> for t in {1..10..2};do  echo $t; done
1
3
5
7
9
```

??????????????
```
$> for dir in */;do echo "${dir%/}"; done
```

??????
```
$> cat tables_name.lst | while read sch tab;do
> echo "export to $tab.ixf of ixf messages export_$tab.msg select * from $sch.$tab"
> done
```

```
// while loop ???
// ? 3 ??? /worktmp ???????
$> while true;do
> df -h | grep /worktmp
> sleep 3
> done
```

```
// ?? DB2 ???
$> while read s t;do
> db2 "select count(*) from $s.$t"
> done < tables.lst > count-tables.out
```

```
??? CSV
$> while IFS=, read s t;do
> db2 "select count(*) from $s.$t"
> done < tables.csv > count-tables.out
```

```
// ????????? /plugins/mactrack ???
$> ps -ef | grep "/plugins/mactrack" | awk '{system("kill " $2);}'
```

```
// ???? Loop Counter
x=1
while [ $x -le 5 ]
do
  echo "Welcome $x times"
  x=$(( $x + 1 )) ?? x=$[$x + 1]
done
```

sort ??

sort -t ',' -k5,5 -k1,1 -k9,9 -k3,3 -k11,11 my.csv

- -t ????
- -k5,5 ??? 5 ?????????
- ?????????? 5, 1, 9, 3, 11 ?
- ???????????????? -k5,5n

?? * ???????

reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)

date ??

SHELL ??

```
NOW=`date "+%Y/%m/%d %H:%M:%S"`
```

```
eval `date "+day=%d; month=%m; year=%Y"`
BKNAME="cacti-backup-$year-$month-$day.tar.gz"
```

```
NOWD=$(date +"F")   # YYYY-MM-DD
NOWT=$(date +"%T")  # H:M:S
```

    %T   time; same as %H:%M:%S

? Date ??? EPOCH ????
? perl ??? AIX

```
perl -e 'use Time::Local; print timelocal(0,25,1,11,11,2008), "\n";'
```

??????

```
# echo `date "+%y-%m-%d_%H%M%S"`
17-05-22_105503
```

```
# echo `date "+%Y/%m/%d"`
2015/07/17
```

```
# echo `date "+%F"`
2015-07-17
```

```
# date --date="49 days ago"
?  9? 11 16:17:02 CST 2016
```

```
# date --date="1 month ago"
?  9? 30 16:17:34 CST 2016
```

???????????

```
start=`date "+%Y/%m/%d %H:%M:%S"`
start_s=$(date -d "$start" +%s)

Sleep 20

end=`date "+%Y/%m/%d %H:%M:%S"`
end_s=$(date -d "$end" +%s)
diff=$((end_s - start_s))
```

find ??
```
// ???? 1000 MB ???

find / -type f -size +1000M

// ???????????
?????? 2012 - 2014 ???????? /export_data/2012-2014?

touch --date "2012-01-01" /tmp/start
touch --date "2015-01-01" /tmp/end

find /home/ams/ipdr -type f -newer /tmp/start -not -newer /tmp/end > 2012-2014.lst
find /home/ams/ipdr -type f -newer /tmp/start -not -newer /tmp/end -exec cp -a {}  /export_data/
2012-2014 \;
find /home/ams/ipdr -type f -newer /tmp/start -not -newer /tmp/end -exec rm -f {} \;

// ?? 2018-03-20 ? 2018-04-10 ?????????

find ~/ -xdev -newermt 2018-03-20 \! -newermt 2018-04-10 -type f -ls

// ?? 365???/20???? ?????

find ./ -ctime +365 -ls
find ./ -cmin +20 -ls
```

TIP:

    ctime ??????

    mtime ????????

    atime ????????

```
// ??3?????????,??? Excel format(csv)
```

```
find . -xdev -mtime -3 -ls > found.list
sed 's/^[ ]*//g;s/[ ][ ]*/  /g' found.list | awk '{print $3","$5","$6","$7","$8" "$9","$10","$11}' >
found.list.csv
```

// ??????????

?? 5 ????????(?????????)
```
find dir -cmin -5
```

?? 10 ????????
```
find dir -mmin 10
```

// ?? data ??????????? log????????? log ????? archive-2013
?????? ./archive-2013

```
cd data/
mkdir archive-2013
find ./ -path "./archive-2013" -prune -o -name "dcdb_13*" -exec mv {} archive-2013 \;
```

TIPs:

????????????
```
find ./  \( -path "./dir1" -o -path "./dir2" \) -prune -o -name "dcdb_13*" -exec mv {} archive-
XXXX \;
```

// ?????????

```
find . -type f -exec wc -c {} \; | sort -nr | head
```

// ??????????????

```
find /istrpt/arlog/ -name "*.LOG" -print | xargs ls -lt
```

??????????????
? find

??????????????
```
find . -type f | wc -l
```

??????????????????
```
find . -maxdepth 1 -type d -print0 | xargs -0 -I {} sh -c 'echo $(find {} -type f | wc -l) {}' | sort -n
NOTE: ??????????????
```

? rsync ???? /usr ?????

rsync --stats --dry-run -ax /usr /tmp

Number of files: 326,373 (reg: 211,698, dir: 24,284, link: 90,391)
Number of created files: 326,373 (reg: 211,698, dir: 24,284, link: 90,391)
Number of deleted files: 0
Number of regular files transferred: 211,698
Total file size: 7,180,685,730 bytes
Total transferred file size: 7,178,524,818 bytes

NOTE: ?????????????/tmp ????????????? reg: 211698 ??????

? tree

tree /mydir -a | tail -n 1

5 directories, 56 files

NOTE: ???????? symbolic link ?????

?????????
reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)
??????????????

mkdir {AAA,BBB,CCC}

grep ??
?????

  - http://www.cyberciti.biz/faq/grep-re...r-expressions/
  - https://www.ubuntupit.com/practical-...x-enthusiasts/

// ??????

?? . (period) ????????
$ grep dev.sda /etc/fstab
/dev/sda3   /   reiserfs   noatime,ro 1 1
/dev/sda1   /boot   reiserfs   noauto,noatime,notail 1 2
/dev/sda2   swap   swap   sw 0 0
#/dev/sda4   /mnt/extra   reiserfs   noatime,rw 1 1

?? [ ]
$ grep dev.sda[12] /etc/fstab
/dev/sda1   /boot   reiserfs   noauto,noatime,notail 1 2
/dev/sda2   swap   swap   sw 0 0

?? [^12] ???1,2??

```
$ grep dev.sda[^12] /etc/fstab
/dev/sda3      /           reiserfs      noatime,ro 1 1
#/dev/sda4    /mnt/extra    reiserfs        noatime,rw 1 1
```

??????
```
$ grep '^#' /etc/fstab
# /etc/fstab: static file system information.
#
$ grep '^#.*\.$' /etc/fstab
# /etc/fstab: static file system information.
#
$ grep 'foo$' filename
```

?????????????
```
grep -w "boo" myfile.txt
```

???????? *** ????
```
grep '\*\*\*' myfile.txt
```

?? email ??
```
grep -E -o "\b[A-Za-z0-9._%+-]+@[A-Za-z0-9.-]+\.[A-Za-z]{2,6}\b" /path/to/data
```

?? IP ??
```
egrep '\b(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?\.){3}(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)' /etc/hosts
```

??????
```
grep '[vV][iI][Vv][Ee][kK]' filename
grep '[vV]ivek' filename
grep -w '[vV]ivek[0-9]' filename
grep 'foo[0-9][0-9]' filename
grep '[A-Za-z]' filename
grep [wn] filename
```


// ???????(???????)


```
> ls /var/log/ | grep -E "http|secure"
?
> ls /var/log/ | grep "http\|secure"
```

// ????????

reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)
// ??????????????
???????????


```
cd /var/www/html
grep -r "[?????]" *
```

grep -Ril "specific_text" /path/to/dir

// ?????????????
????????????????? AIX ? grep -p

```
# lspci -v | awk '/ATI/,/^$/'
01:03.0 VGA compatible controller: ATI Technologies Inc Rage XL (rev 27) (prog-if 00 [VGA])
    Subsystem: Compaq Computer Corporation: Unknown device 001e
    Flags: bus master, stepping, medium devsel, latency 64
    Memory at fc000000 (32-bit, non-prefetchable) [size=16M]
    I/O ports at 3000 [size=256]
    Memory at fbff0000 (32-bit, non-prefetchable) [size=4K]
    Capabilities: [5c] Power Management version 2
```

???grepp.awk
?????

```
#> lspci -v | grepp.awk ATI
```

??????? 5 ???
Sample#1:

```
find . -not -type d -printf "%T+ %p\n" | sort -r | awk '{print $2}' | head -n 5
./b01.tar.gz
./b02.tar.gz
./b03.tar.gz
./b04.tar.gz
./b05.tar.gz
```

Sample#2:

```
find . -name "*" -type f | xargs ls -lt | head -n 5 | awk '{print $9}'
./b11.tar.gz
./b10.tar.gz
./b09.tar.gz
./b08.tar.gz
./b07.tar.gz
```

???????

```
# ????
ls -l -Sr1 /path-to-dir

# ????
ls --sort=size /path-to-dir
```

```
# ???????????
ls -Sr1 worktmp/ | while IFS=$'\n' read -r file; do gzip -v9 "$file"; done

# ??????????
du -csk * | sort -rn | head -10
```

??????

```
#?????
toLower() {
  echo $1 | tr "[:upper:]" "[:lower:]"
 }

#?????
ToUpper() {
  echo $1 | tr "[:lower:]" "[:upper:]"
 }
```

?? MySQL DB ????

```
# Checking if DB XXX existed
# if existed, return 0
mysql -uroot -p$DBPASS --batch --skip-column-names -e "SHOW DATABASES LIKE '$DBNAME';" | grep
$DBNAME > /dev/null; echo $?
```

test ??
(1) ????????


```
Str1 == str2 | ?str1?str2???, ??True
Str1 != str2| ?str1?str2???, ??True
Str1 < Str2
Str1 <= Str2
Str1 > Str2
Str1 >= Str2
Str     | ?str??????, ??True
  -n str   | ?str?????0?, ??True
  -z str   | ?str????0?, ??True
```

(2) ??(??) ??


```
Int1 -eq int2 |?int1??int2?, ??True
Int1 -ge int2 |?int1??/??int2?, ??True
Int1 -le int2 |?int1??/??int2?, ??True
Int1 -gt int2 |?int1??int2?, ??True
Int1 -ne int2 |?int1???int2?, ??True
Int1 -lt int2 |?int1?? int2?, ??True
```

More Sample Codes:

reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)
(3) ?????

```
-e file   | ??????
-d file   | ?file??????, ?? True
-f file   | ?file????????, ?? True
-r file   | ?file????????, ?? True
-s file   | ?file??????0?, ?? True
-w file   | ?file????????, ?? True
-x file   | ?file?????????, ?? True
```

(4) shell??????????/??????,???,?????????

```
! expr      |?expr???False?, ??True
```

????

reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)
?????????

??	??
$0	????
$1	?1???
$2	?2???
${10}	?10??? #10
$#	?????
$*	?????? (??????)
$@	?????? (?????????)
${$*}	????????????
${$@}	????????????
$?	?????????
$$	????? ID
$_	???????????

$!	????????? ID
u=${1:-root}	?? $1 ???????? root
u=${USER:foo}	?? $USER ???????? foo????? $1, $2 ??
len=${#var}	?? $var ?????

?? $2 ?????????????

${varName?Error varName is not defined}
${varName:?Error varName is not defined or is empty}

MESSAGE="Usage: mkjail.sh domain-name" *## define error message*
_domain=${2:?"Error: ${MESSAGE}"}   *## you can use $MESSAGE too*

${varable} ????

https://linuxconfig.org/introduction...ter-expansions

?????????????????
reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)

TIPs
???????? python ?????????????????????

reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)
???????

- %s ??
- %d ??

printf "%-40s ....%s\n" "Disable the service $1" "[$2]"

Disable the service apmd   ....[OK]
Disable the service bluetooth   ....[OK]
Disable the service hidd   ....[OK]
Disable the service cups   ....[OK]
Disable the service firstboot   ....[OK]
Disable the service readahead_early   ....[OK]

printf "%40s ....%s\n" "Disable the service $1" "[$2]"

        Disable the service apmd ....[OK]

Disable the service bluetooth ....[OK]
Disable the service hidd ....[OK]
Disable the service cups ....[OK]
Disable the service firstboot ....[OK]
Disable the service readahead_early ....[OK]

??????
????


```
YEAR=$((YEAR-1))
MONTH=$((MONTH-1))
echo "($YEAR + ($YEAR/4) - ($YEAR/100))"
```

X?Y??


```
pow() {
   if [ -z "$1" ]; then
      echo "usage: pow <base> <exponent>"
   else
      echo "$1^$2" | bc
   fi
}
```

```
pow2() {
   if [ -z "$1" ]; then
      echo "usage: pow <base> <exponent>"
   else
      echo "$[$1**$2]"
   fi
}
```

```
pow 2 3
```

???????0

```
# $1 is month, $2 is day, $3 is year
# Strip off leading off zeros from month and day
MONTH=${1#0}
DAY=${2#0}
YEAR=$3
```

????????? XXX

```
NAME=${1%.*}
echo $NAME
```

????

Operator "#" means "delete from the left, to the first case of what follows."

```
$ x="This is my test string."
$ echo ${x#* }
```

is my test string.

Operator "##" means "delete from the left, to the last case of what follows."

```
$ x="This is my test string."
$ echo ${x##* }
```

string.

Operator "%" means "delete from the right, to the first case of what follows."

```
$ x="This is my test string."
$ echo ${x% *}
```

This is my test

Operator "%%" means "delete from the right, to the last case of what follows."

```
$ x="This is my test string."
$ echo ${x%% *}
```

This

??????????

```
cmp -s file1 file2
rc=$?
```

- rc=0???????
- rc=1???????
- rc>1???????

???????

```
#!/bin/bash
FILENAME=/home/heiko/dummy/packages.txt
FILESIZE=$(stat -c%s "$FILENAME")
echo "Size of $FILENAME = $FILESIZE bytes."
```

???????????

```
// ?????
readlink -f <file.name>
```

```
// ????
MY_PATH=$(readlink -f "$0") ;?????????
MY_PATH=$( cd $( dirname "$0" ) && pwd )
```

?????????

```
>echo $0
./test.sh
```

```
>echo `basename $0`
test.sh
```

expr ??

```
; ????????????
; ???? fax ???????????????
expr "001123@fax.home.net" : '\(.*\)@fax*'
```

??

```
\(   \) ??? ( )????????????
.  ????
.* ?????????
[^=]  ? = ???
```

awk ??

- http://techarena51.com/index.php/adv...-examples-awk/
- https://linuxhandbook.com/awk-command-tutorial/

????

```
awk '/^this/{print $0}'        ;? sed -n '/^this/p' ??
```

?????? sort ? uniq ??? awk ????????????? awk ?????????????????

```
awk '!x[$0]++' filewithdupes ? newfile
```

??? disabled ??????? 1, 3 ????

```
awk '/disabled/{print $1, $3}'
```

?????

```
awk '{print "up " $1 /60 " minutes"}' /proc/uptime
```

```
df -lP -text4 |awk '{sum += $4} END {printf "%d GiB\n", sum/1048576}'
df -lP -text4 |awk '{sum += $4} END {printf "%d GiB\n", sum/2**20}'
```

?????

```
$> df -k |grep "/dev/" | awk '($2 > 0 && ((1 - $3/$2)  > 0.9) ) {print $0 }'
```

```
$> awk -F" " '{print ($7 != "A")?$0"***":$0}' myfile
```

??????9??????? 0x00000000 ????????

```
$> cat info.out | awk '($9 != "0x00000000") {print}'
```

?? uid >= 500 ? <= 10000 ??

```
$> export UGIDLIMIT=500
$> awk -v LIMIT=$UGIDLIMIT -F: '($3>=LIMIT) && ($3<=10000)' /etc/passwd
```

?????????

```
$ awk  'BEGIN {print 12345678901234567890}'
1.23457e+19
```

???
```
$ awk  'BEGIN {printf("%d\n", 12345678901234567890)}'
12345678901234567168
```

???
```
$ awk  'BEGIN {OFMT="%.0f"; print 12345678901234567890}'
12345678901234567168
```

?? uid=0 ???

```
$> awk -F: '($3 == "0") {print}' /etc/passwd
```

??????????

```
ls -ltd */ | awk -F ' ' '{print $NF}'
```

?????

```
awk '{ printf("1-minute: %s\n5-minute: %s\n15-minute: \
 %s\n",$1,$2,$3); }' /proc/loadavg
```

?????????

reference to undefined name 'syntax' Exception of type
'MindTouch.Deki.Script.Runtime.DekiScriptUndefinedNameException' was thrown. (click for details)

sed ??

- http://www.tecmint.com/linux-sed-command-tips-tricks/
- https://www.cyberciti.biz/faq/how-to...ux-unix-shell/
- sed ??????
- Complete Sed Command Guide
- Sed - An Introduction and Tutorial by Bruce Barnett

```
; ??? 100 ????????
; ??????? p ?? d?
sed -n '100,$p'  my.txt

; ??? 3 ????????
sed '3q' my.txt

; ??? 130 ?
sed -n '130{p;q}' my.txt

; ??? 100 - 130 ???
sed -n '100,130p' my.txt
sed -n '100,130p;130q' my.txt

; ????? all ?????
sed -n '/all/,$p' my.txt

; ??????????????????
sed -n '/keyword/,/^$/p'

; ????? Top ? Bottom ???????
sed -n '/Top/,/Bottom/p'

 ; ????????
sed -n "/PATTERN/p" my.txt

; ?? 2 ????????? xxx
sed '2i xxx' my.txt

; ???????????
sed -e '/patterm/ a\newstring' my.txt

; ?????????? #
sed 's/^/# /' my.txt

; ?????????? End
sed 's/$/ End/' my.txt

;?????# ??
sed '/^#/d'

; ????? # ?????
```

```
sed '/^#\|^$/d'
```

;??????????, ADMIN_ERP_ROLE, RPT01,...
```
sed '/ADMIN_ERP_ROLE/d;/RPT01/d'
```

;?????
```
sed '/^$/d'
sed '/^\s*$/d'
```

; ??? 42 ???
```
sed 42d my.txt
```

;???????? Tab ??
```
sed 's/^[ \t]*//'
sed 's/^[ \t]*//;s/[ \t]*$//'
```

;??????????????, ????? comma ??
```
sed "s/ \+/,/g"
```

; ????
```
sed 's/[[:space:]]//g' mywords
```

; ???????????
```
sed -i 's/[[:space:]]*$//'
```

; ????? ^M (CR ??)
```
sed 's/^M//g'      NOTE: to get ^M type CTRL+V followed by CTRL+M
sed 's/\r$//g'
```

; ?? iXXXX ???, XXXX ???
```
sed '/^i[0-9]*/d' mypasswd
```

;??????
```
sed -e '/^#/d' -e '/^$/d'
```

;??????
```
sed 's/old/new/' mywords
sed 's|old|new|' mywords
```

; ????? 'astlogdir =>' ??????????? 'astlogdir => /mnt/usb/asterisk_log'
; .*$??????????
```
sed -i 's/astlogdir =>.*$/astlogdir => \/mnt\/usb\/asterisk_log/g'
```

; ?? 'none'?????????? '#'
```
sed 's/none/#&/g' mywords
```

; ??? 'daemon' ?????????? 3.txt ???
```
sed '/daemon/r 3.txt' mywords
```

; ???? 'daemon'??????????? 3.txt

sed -n '/daemon/w 3.txt' 1.txt

; ????? 'root' ?????????????? 'test test'
[root@linux-3 ~]# sed '/root/a test test' 1.txt
root:x:0:0:root:/root:/bin/bash
test test
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin

; ????? 'daemon' ?????????????? 'test test'
[root@linux-3 ~]# sed '/^daemon/i test test' 1.txt
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
test test
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin

; ??????? 'ext3' ??? [ ] ???
sed 's/ext3\+/[&]/g' my.txt

; ????????????
sed -i 's/^\(User\|Group\).*/\1 asterisk/' /etc/httpd/conf/httpd.conf

// ????????????

$ cat cookie.txt
xxxx FALSE /   FALSE 0   PHPSESSID   dbbr5nsmib9tgm0h97sbq8ovd0

$ cat cookie.txt | sed 's/^.*PHPSESSID[\t]*//'
dbbr5nsmib9tgm0h97sbq8ovd0

// ????????

?? 10.14.25.196 ? GA016E38 (Hex IP)

 $ cat input.txt

 GA160223.MAE3.219594040120
10.14.25.196.49611.200203080358
GA016E38.O5FA.259D81215343
10.4.1.29.41266.200114031620
GA12640A.M6EE.20EDC3093010

$ sed 's/^\(.*\)\.[A-Z0-9]*\.[A-Z0-9]*/\1/' input.txt

GA160223

10.14.25.196
GA016E38
10.4.1.29
GA12640A

// ? CSV ????????????? comma ??? @@????????? comma ???????????? comma ?????????

sed 's/\(,\)\([^]\)/@@\2/g' orig.csv

TIPs?

s ??

\(\) \(\) ?????????

[^] ??????

\2 ????????????????

g ??????????????????????????????

// ?? A.AA B.BB C.CC 3??????????????

reference to undefined name 'syntax' Exception of type
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TIPs?

^\(([0-9]\+\.[0-9]\+\) \(([0-9]\+\.[0-9]\+\) \(([0-9]\+\.[0-9]\+\).*$????

1-minute: \1\n5-minute: \2\n15-minute: \3 ????

// ????? mailbox = xxx ? mailbox = xxx@context

sed 's/^mailbox = [0-9]*/&@context/g' users.conf

// ??????? AllowOverride None
??????????????

    <Directory "/var/www/html">

    ...

    <Directory>

sed -i ':a;N;$!ba;s/AllowOverride None/AllowOverride All/2' /etc/httpd/conf/httpd.conf

// ?? { } ????????

 Notice: Undefined variable: sn in /var/www/raida/service/fix.php on line 259
 {"server":"RAIDA17","sn":"","status":"success","message":"Fixed: Unit's AN was changed to the PAN. Update your AN to the new PAN.","time":"2017-04-08 06:08:25"}

echo $(cat http_get.txt) | sed 's/.* \({.*}\)$/\1/'

// ?? [ ] ????

echo "[1070059:1,1070060:1,1070039:1]" | sed 's/^\[\(.*\)\]$/\1/'

???????? process ??????????

lsof -p `pidof <app_name>`

??/?????????????????

grep -Ev "^(#|;)" example.txt

?????
?????????????????????

```
# file: remove.list
# please remove this directory and files below
/path/to/file.1
/path/to/file.2
/path/to/dir/
/path/to/dir-1/
```

????????????????

grep -Ev "^(#|;)" remove.list | xargs -n 1 ls -l
grep -Ev "^(#|;)" remove.list | xargs -n 1 rm -rf

????????????

```
## *.old -> *.new
for fname in $(ls *.old);do echo "mv $fname ->"; echo $(echo $fname |sed 's/.old/.new/');mv $fname $(echo $fname | sed 's/.old/.new/');done
```

???? process ID
for SHELL process:

#!/bin/bash

```
#
/path/to/my/shell.sh &
echo $PPID

# pidof <app_name>

#!/bin/bash
echo $$
```

for java process:

```
#!/bin/bash
#
/path/to/java myjava.jar &
echo $!
```

???? IP address

```
internip=`ifconfig | grep -m 2 ^ | cut -f 2 -d ":" | cut -f 1 -d " " | tail -1`
privnet="${internip%.*}.0/255.255.255.0"
echo $internip
echo $privnet
```

?????????????

```
#!/bin/bash

devs=`ip -o link | cut -f 2 --delimiter=' ' -`
echo "devs="$devs

for i in $devs; do
   dev_name=$(echo ${i%:})
   ip=$(ifconfig $d) && ip=${ip#*inet addr:} && ip=${ip%% *}
   echo "Device Name: "$dev_name
   echo "Device IP: "$ip
   echo "-------------"
done
```

auto-rar.sh

reference to undefined name 'syntax' Exception of type
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