# Intrusion post-mortem analysis


### Summary

In the night from February 26 to February 27, 1991, an intruder accessed the machine **wsinfo11** using the accounts of **wsines** and **wsinae**. The intruder did not gain system privileges. However, it is likely that a copy of the password file was shipped elsewhere. Also, it appears that the system **wsinfo11** was used to attack other systems.

The text that follows presents a timeline of events, based on an analysis of the information that was left behind. Detailed information can be found in appendices at the end of this report.


### Alarm: sudden burst of login failures

A sudden burst of login failures for multiple accounts usually indicates that someone is trying to access a system via someone else's account.

```
Feb 26 22:01:26 wsinfo11 in.telnetd[28860]: connect from nts100.win.tue.nl
Feb 26 22:02:10 wsinfo11 login: 2 LOGIN FAILURES FROM nts100.win.tue.nl, wsinpp
Feb 26 22:02:36 wsinfo11 in.telnetd[28862]: connect from nts100.win.tue.nl
Feb 26 22:03:29 wsinfo11 login: 2 LOGIN FAILURES FROM nts100.win.tue.nl, wsdwnb
Feb 26 22:03:38 wsinfo11 login: 1 LOGIN FAILURE FROM nts100.win.tue.nl, exspect1
```

Earlier this week it was found that one of the accounts, **wsdwnb**, was compromised on the system **eutws1.win.tue.nl** (the math department VAX machine).

### First login session, 22:03 - 22:21

TCP Wrapper and login accounting records:

```
Feb 26 22:03:42 wsinfo11 in.telnetd[28870]: connect from nts100.win.tue.nl
wsines    ttyp0    nts100.win.tue.n Tue Feb 26 22:03 - 22:21  (00:17)
```

At 22:05 the intruder read some news, which is evident from the presence of a **.oldnewsrc** file in the **wsines** home directory. See the appendix for what news groups the intruder looked at, and for a detailed overview of files accessed during the intrusion.

```
-rw-r--r--  1 wsines  24581 Feb 26 22:05 /home/svin02b/wsines/.oldnewsrc
```

At 22:09, the intruder attempted to log into the file server **svin02**:

```
Feb 26 22:09:34 svin02 rlogind[3941]: connect from wsines@wsinfo11
Feb 26 22:09:36 svin02 login: wsines LOGIN REFUSED FROM wsinfo11
Feb 26 22:09:51 svin02 rsh[3947]: connect from wsines@wsinfo11
```

At 22:16, files owned by user **wswietse** were read (see appendix for a detailed overview of files accessed during the intrusion).

```
-rw-r--r--  1 wswietse       48 Feb 26 22:16 ~wswietse/.mike
-rw-r--r--  1 root        57344 Feb 26 22:17 ~wswietse/junk
-rw-r--r--  1 wswietse    12051 Feb 26 22:19 ~wswietse/incoming/logging-package/article
```

### Second login session, 22:21 - 22:29

TCP Wrapper and login accounting records:

```
Feb 26 22:21:32 wsinfo11 in.telnetd[28950]: connect from nts100.win.tue.nl
wsines    ttyp0    nts100.win.tue.n Tue Feb 26 22:21 - 22:29  (00:07)
```

Another remote shell access to the file server **svin02**:

```
Feb 26 22:22:04 svin02 rsh[4381]: connect from wsines@wsinfo11
```

Another look at **wswietse**'s files, in this case, articles from mailing lists and news groups:

```
-rw-r--r--  1 wswietse   211441 Feb 26 22:28 ~wswietse/incoming/bugs-sun/bugs-sun-old
-rw-r--r--  1 wswietse     2218 Feb 26 22:29 ~wswietse/incoming/bugs-sun/article
-rw-r--r--  1 wswietse     4993 Feb 26 22:29 ~wswietse/incoming/bugs-sun/bugs-sun-feedback
-rw-r--r--  1 wswietse    45632 Feb 26 22:29 ~wswietse/incoming/bugs-sun/bugs-sun-new
-rw-r--r--  1 wswietse    33527 Feb 26 22:29 ~wswietse/incoming/bugs-sun/bugs-sun-old-x
```

**Third login session, 22:29 - 02:59**

TCP Wrapper and login accounting records:

```
Feb 26 22:29:39 wsinfo11 in.telnetd[28988]: connect from nts100.win.tue.nl
wsines    ttyp0    nts100.win.tue.n Tue Feb 26 22:29 - 02:59  (04:30)
```

Login as user **wsinae**:

```
Feb 26 22:30:37 wsinfo11 su: 'su wsinae' succeeded for wsines on /dev/ttyp0
```

Playing with mail:

```
Feb 26 22:38:25 wsinfo11 sendmail[29030]: AA29030:
    from=wsines, size=92, class=0
Feb 26 22:38:27 svin02 sendmail[4899]: AA04899:
    from=<wsines@info.win.tue.nl>, size=335, class=0
Feb 26 22:38:27 wsinfo11 sendmail[29033]: AA29030: to=xxx@aaaaaaaaa\
    aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa,
    delay=00:00:03, stat=Sent

Feb 26 22:40:52 wsinfo11 sendmail[29045]: AA29045:
    from=wsines, size=866, class=0
Feb 26 22:40:52 wsinfo11 sendmail[29045]: AA29045: to=aaaaaaaaaaaaa\
    aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa\
    aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa,
    delay=00:00:02, stat=User unknown
```

At 22:56 the serial ports were accessed, possibly to find out if a modem (telephone or local area network) was attached to the machine:

```
crw-rw-rw-  1 root      12,   0 Feb 26 22:56 /export/root/wsinfo11/dev/ttya
crw-rw-rw-  1 root      12,   1 Feb 26 22:56 /export/root/wsinfo11/dev/ttyb
```

According to the process accounting records (appendix) the **telnet** command was used from 22:58 to 02:09.

The intruder logged in from **wsinfo11** to **apple-gunkies.ai.mit.edu** (128.52.46.17), witness the login record that was found on the remote system:

```
guest     ttyp3    131.155.3.70     Tue Feb 26 16:39 - 16:46  (00:07)
```

The system clock is a bit off there. According to our clocks, that login session would have been from 22:47-22:55, which is a good match with the network router statistics (appendix).

For the remainder of that telnet command the intruder was connected to **131.211.112.44**, an Annex terminal server at Utrecht university.

According to command accounting (appendix) the intruder also made **telnet**, **tftp** and/or **ftp** connections. According to network router statistics (appendix) the following systems were contacted at the time of intrusion:

- 131.211.112.44 (Utrecht terminal server)
- 128.52.46.35 (**wookumz.ai.mit.edu**). This machine is in a time zone 6 hours away. Login record on the remote system:

  ```
  guest     ftp      wsinfo11.info.wi Tue Feb 26 20:25 - 20:25  (00:00)
  ```

- 128.113.55.13 (**crockett1c.its.rpi.edu**). This system had connected to **wsinfo11** earlier that same evening via anonymous FTP. Around 02:06, the intruder probed a number of addresses in 128.113.*.*.

At 02:25 a program was compiled, probably to break passwords, witness the file access time of the include file for password file lookup routines:

```
-r--r--r--  1 root          563 Feb 27 02:25 /usr/include/pwd.h
```

The program, named **a.out**, was started at 02:28 and was aborted at 02:55 (see appendix for process accounting records).

At 02:55 the intruder exited from a C shell process, and unknowingly left behind a history of the last 40 executed commands (appendix):

```
-rw-r--r--  1 wsines        390 Feb 27 02:55 /home/svin02b/wsines/.history
```

At the end of this login session the intruder read some more news with the **rn** command:

```
-rw-r--r--  1 wsines         28 Feb 27 02:57 /home/svin02b/wsines/.rnlast
-rw-r--r--  1 wsines      24581 Feb 27 02:59 /home/svin02b/wsines/.newsrc
```

### Appendix: deleted files below ˜wsines

The names of deleted files were obtained by comparing the list of existing file names (**ls -f**) with output from the **strings** command. Note: only the names of deleted files are known, not the time when those files were removed or what their contents were:

```
hosts.equiv
p.p
esu
xxx.o
l.outa29332
a.out
icon
```

### Appendix: news groups read by the intruder

News groups and article numbers were obtained by comparing the contents of successive **.newsrc** files (the previous version is renamed to **.oldnewsrc**). Interesting is the **soc.culture.french** group. The others are not surprising.

```
soc.culture.french: 2665-2706
alt.security: 1558-1592
alt.hackers: 163-228
alt.security.index: 8
```

### Appendix: network router statistics

What follows are byte counts of traffic between **wsinfo11** and remote systems that coincided with the intrusion, including an anonymous FTP session by 128.113.55.13 (**crockett1c.its.rpi.edu**) that may or may not be related to the intrusion.

Statistics are aggregated over 30-minute intervals. The data format is: internet address, bytes-received, bytes-sent, (hostname if known).

```
SAMPLE 91-02-26 21:50:07

SAMPLE 91-02-26 22:20:07

SAMPLE 91-02-26 22:50:07
    128.52.46.17              8518       4067  (apple-gunkies.ai.mit.edu)
    128.113.55.13             1069       2080  (anonymous FTP session)

SAMPLE 91-02-26 23:20:07
    128.52.46.17             12447       6239  (apple-gunkies.ai.mit.edu)
    131.211.112.44          132941      69777  (Utrecht terminal server)
    128.113.55.13            12742     187763  (anonymous FTP session)

SAMPLE 91-02-26 23:50:07
    131.211.112.44          171367      62929  (Utrecht terminal server)

SAMPLE 91-02-27 00:20:07
    131.211.112.44          230738      70866  (Utrecht terminal server)
```

```
SAMPLE 91-02-27 00:50:08
    131.211.112.44           219883     107761  (Utrecht terminal server)

SAMPLE 91-02-27 01:20:07
    131.211.112.44           246390      85645  (Utrecht terminal server)

SAMPLE 91-02-27 01:50:07
    131.211.112.44           152983     120045  (Utrecht terminal server)

SAMPLE 91-02-27 02:20:07
    131.211.112.44           122679      61868  (Utrecht terminal server)
    129.140.10.74                56          0  (Ithaca.NY.NSS.NSF.NET)
    128.113.55.13            229093      15050  (crockett1c.its.rpi.edu)

SAMPLE 91-02-27 02:50:07
    128.113.1.1                 856        752  (nyser1-gw.rpi.edu)
    128.113.1.2                   0         40  (nyser2-gw.rpi.edu)
    128.113.24.31              3092        991  (ts.its.rpi.edu)
    128.113.55.1                  0        120  (non-existent system?)
    128.113.55.10                 0         40  (non-existent system?)
    128.113.55.11                 0         40  (crockett1a.its.rpi.edu)
    128.113.55.12                 0         40  (crockett1b.its.rpi.edu)
    128.113.55.13            163690      27220  (crockett1c.its.rpi.edu)
    128.113.55.14               200        250  (crockett1d.its.rpi.edu)
    128.113.55.20                 0         40  (non-existent system?)
    128.52.46.35              18542       1790  (wookumz.ai.mit.edu)
    131.211.112.44            18820      12948  (Utrecht terminal server)

SAMPLE 91-02-27 03:20:08
    128.113.4.44                  0        120  (non-existent system?)

SAMPLE 91-02-27 03:50:07
```

## Appendix: files/directories sorted by read/execute time

```
-rw-r--r--  1 wsines        294 Feb 26 22:04 /home/svin02b/wsines/.profile
-rwxr-xr-x  1 root         6912 Feb 26 22:04 /usr/ucb/lastcomm
-rwxr-xr-x  1 root         5544 Feb 26 22:04 /usr/ucb/leave
-rw-r--r--  1 wsines       5275 Feb 26 22:05 /home/svin02b/wsines/.rnsoft
-rw-r--r--  1 root      1697544 Feb 26 22:10 /var/adm/wtmp
-rwxr-xr-x  1 root         4760 Feb 26 22:10 /usr/ucb/from
-rwxr-xr-x  1 root         5704 Feb 26 22:10 /usr/ucb/last
-rw-r--r--  1 root         5846 Feb 26 22:11 /var/adm/messages.0
-rw-r--r--  1 root         2935 Feb 26 22:12 /var/adm/messages.1
-rw-rw-r--  1 359            18 Feb 26 22:15 /home/svbs01b/rcjvdb/.forward
-rwxr-xr-x  1 root        49152 Feb 26 22:15 /usr/sccs/get
-rwxr-xr-x  1 root        24576 Feb 26 22:15 /usr/ucb/sccs
-rw-r--r--  1 wswietse       48 Feb 26 22:16 ~wswietse/.mike
-rw-r--r--  1 root        57344 Feb 26 22:17 ~wswietse/junk
-rwxr-xr-x  1 root         3224 Feb 26 22:18 /usr/ucb/head
-rw-r--r--  1 wswietse    12051 Feb 26 22:19 ~wswietse/incoming/logging-package/article
-rwxr-xr-x  1 root         5216 Feb 26 22:21 /usr/bin/ypcat
lrwxrwxrwx  1 root           20 Feb 26 22:22 /etc/.login -> /usr/share/etc/login
-rw-r--r--  1 root          997 Feb 26 22:22 /export/root/wsinfo11/etc/fbtab
-rw-r--r--  1 root         2866 Feb 26 22:22 /export/root/wsinfo11/etc/gettytab
lrwxrwxrwx  1 root           22 Feb 26 22:23 /etc/magic -> ../usr/share/etc/magic
-rwxr-xr-x  1 root        32768 Feb 26 22:23 /usr/bin/file
-rwsr-xr-x  1 root        24576 Feb 26 22:26 /usr/bin/sunview1/sv_release
-rw-r--r--  1 root          684 Feb 26 22:27 /usr/share/lib/terminfo/u/unknown
-rw-r--r--  1 wsines        273 Feb 26 22:28 /home/svin02b/wsines/.sun
-rw-r--r--  1 wswietse   211441 Feb 26 22:28 ~wswietse/incoming/bugs-sun/bugs-sun-old
-rw-r--r--  1 wswietse     2218 Feb 26 22:29 ~wswietse/incoming/bugs-sun/article
-rw-r--r--  1 wswietse     4993 Feb 26 22:29 ~wswietse/incoming/bugs-sun/bugs-sun-feedback
-rw-r--r--  1 wswietse    45632 Feb 26 22:29 ~wswietse/incoming/bugs-sun/bugs-sun-new
-rw-r--r--  1 wswietse    33527 Feb 26 22:29 ~wswietse/incoming/bugs-sun/bugs-sun-old-x
-rwxr-xr-x  1 wsinae       1779 Feb 26 22:30 /home/svin02b/wsinae/.cshrc
-rw-r--r--  1 wsinae     200713 Feb 26 22:32 /home/svin02b/wsinae/News/m
-rw-r--r--  1 root         1024 Feb 26 22:38 /var/yp/info.win.tue.nl/protocols.bynumber.pag
-rw-r--r--  1 root         1024 Feb 26 22:40 /export/root/wsinfo11/etc/aliases.pag
-rwxr-xr-x  1 bin         16384 Feb 26 22:42 /usr/lib/makekey
```

```
-r--r--r--  1 root         2200 Feb 26 22:55 /export/root/wsinfo11/etc/ttys
crw-rw-rw-  1 root      12,   0 Feb 26 22:56 /export/root/wsinfo11/dev/ttya
crw-rw-rw-  1 root      12,   1 Feb 26 22:57 /export/root/wsinfo11/dev/ttyb
-rw-r--r--  1 root          183 Feb 27 00:23 /export/root/wsinfo11/.history
-rw-rw-r--  1 root       147348 Feb 27 02:09 /export/root/wsinfo11/var/adm/wtmp
-rwxr-xr-x  1 root      1401990 Feb 27 02:09 /export/root/wsinfo11/vmunix
-rwxr-xr-x  1 root        24576 Feb 27 02:10 /usr/ucb/tftp
-rw-r--r--  1 root          725 Feb 27 02:13 /export/root/wsinfo11/etc/mtab
-rw-r--r--  1 wsines       1066 Feb 27 02:13 /home/svin02b/wsines/.cshrc
-rw-r--r--  1 wsines        390 Feb 27 02:14 /home/svin02b/wsines/.history
-rw-r--r--  1 wsines      24581 Feb 27 02:14 /home/svin02b/wsines/.oldnewsrc
-rw-r--r--  1 wswietse     1162 Feb 27 02:17 ~wswietse/lib/cuckoo.clock
-rw-r--r--  1 wswietse      152 Feb 27 02:18 ~wswietse/.pet
lrwxrwxrwx  1 root            7 Feb 27 02:25 /export/root/wsinfo11/lib -> usr/lib
-r--r--r--  1 root          563 Feb 27 02:25 /usr/include/pwd.h
lrwxrwxrwx  1 root            7 Feb 27 02:28 /usr/sys -> kvm/sys
lrwxrwxrwx  1 root            9 Feb 27 02:43 /home/svin02a/local/SPARC/src -> /auto/src
-rw-r--r--  1 root       104112 Feb 27 02:45 /export/root/wsinfo11/etc/psdatabase
-rwxr-xr-x  1 root         8560 Feb 27 02:46 /usr/ucb/rusers
-rwxr-xr-x  1 root         3680 Feb 27 02:46 /usr/ucb/rwho
-rw-r--r--  1 wsines         28 Feb 27 02:56 /home/svin02b/wsines/.rnlast
-rw-r--r--  1 wsines      24581 Feb 27 02:59 /home/svin02b/wsines/.newsrc
```

### Appendix: files/directories sorted by modification time

```
-rw-r--r--  1 wsines      24581 Feb 26 22:05 /home/svin02b/wsines/.oldnewsrc
crw-rw-rw-  1 root      12,   0 Feb 26 22:56 /export/root/wsinfo11/dev/ttya
crw-rw-rw-  1 root      12,   1 Feb 26 22:56 /export/root/wsinfo11/dev/ttyb
-rw-r--r--  1 wsines        390 Feb 27 02:55 /home/svin02b/wsines/.history
-rw-r--r--  1 wsines         28 Feb 27 02:57 /home/svin02b/wsines/.rnlast
-rw-r--r--  1 wsines      24581 Feb 27 02:59 /home/svin02b/wsines/.newsrc
drwxrwxr-x 11 wsines        512 Feb 27 02:59 /home/svin02b/wsines
```

### Appendix: shell command history

Note: the last command executed appears at the end of the list. **p.p** is probably the output from a password guessing program (**a.out**) that was running in the background.

```
tail -2 p.p             tail p.p
tail p.p                telnet 128.113.4.44
ls -la p.p              ls -la p.p
vi passwd               tail p.p
tail p.p                vi passwd
wc /etc/passwd          ls -la p.p
cat /etc/passwd         cat p.p
cd /etc/security        kill 0
ls                      ps -x
cd                      taill p.p
rm dead.letter          tail p.p
rm dead*                ls -la
ls -la                  rm a.out
rm -rf .b               cat p.p
ls -la                  tail p.p
ls robert               kill %1 %2
ls -la                  jobs
tail p.p                tail p.p
vi passwd               ps -x
ls -la p.p              lastcomm | head
```

### Appendix: process accounting

Unfortunately, process accounting records are reset nightly at 00:15, so no records exist for processes that terminated before that time.

Note: each record is logged when a process exits. The time at the end of each record indicates when the process was started. The last record written is at the top of the list.

```
sh        S   wsines  __         1.14 secs Tue Feb 26 22:29
rn            wsines  ttyp0      2.30 secs Wed Feb 27 02:56
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:56
ls            wsines  ttyp0      0.06 secs Wed Feb 27 02:56
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:56
rm            wsines  ttyp0      0.05 secs Wed Feb 27 02:56
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:56
csh           wsines  ttyp0      2.66 secs Wed Feb 27 02:13
lastcomm     X wsines ttyp0      0.80 secs Wed Feb 27 02:55
head          wsines  ttyp0      0.03 secs Wed Feb 27 02:55
ps            wsines  ttyp0      0.27 secs Wed Feb 27 02:55
tail          wsines  ttyp0      0.06 secs Wed Feb 27 02:55
a.out        X wsines ttyp0   1398.78 secs Wed Feb 27 02:28
cat          X wsines ttyp0      0.14 secs Wed Feb 27 02:28
tail          wsines  ttyp0      0.06 secs Wed Feb 27 02:55
cat           wsines  ttyp0      0.06 secs Wed Feb 27 02:54
rm            wsines  ttyp0      0.06 secs Wed Feb 27 02:54
ls            wsines  ttyp0      0.19 secs Wed Feb 27 02:54
tail          wsines  ttyp0      0.03 secs Wed Feb 27 02:54
csh       F   wsines  ttyp0      0.00 secs Wed Feb 27 02:54
ps            wsines  ttyp0      0.30 secs Wed Feb 27 02:54
cat           wsines  ttyp0      0.06 secs Wed Feb 27 02:53
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:53
vi            wsines  ttyp0      1.14 secs Wed Feb 27 02:53
tail          wsines  ttyp0      0.06 secs Wed Feb 27 02:53
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:52
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:52
tail          wsines  ttyp0      0.05 secs Wed Feb 27 02:51
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:51
vi            wsines  ttyp0      1.66 secs Wed Feb 27 02:50
tail          wsines  ttyp0      0.03 secs Wed Feb 27 02:50
ls            wsines  ttyp0      0.16 secs Wed Feb 27 02:50
ls            wsines  ttyp0      0.06 secs Wed Feb 27 02:50
ls            wsines  ttyp0      0.11 secs Wed Feb 27 02:50
rm            wsines  ttyp0      0.16 secs Wed Feb 27 02:50
ls            wsines  ttyp0      0.16 secs Wed Feb 27 02:49
rm            wsines  ttyp0      0.06 secs Wed Feb 27 02:49
rm            wsines  ttyp0      0.03 secs Wed Feb 27 02:49
ls            wsines  ttyp0      0.06 secs Wed Feb 27 02:49
cat           wsines  ttyp0      0.06 secs Wed Feb 27 02:49
wc            wsines  ttyp0      0.08 secs Wed Feb 27 02:49
tail          wsines  ttyp0      0.03 secs Wed Feb 27 02:48
vi            wsines  ttyp0      1.36 secs Wed Feb 27 02:47
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:47
tail          wsines  ttyp0      0.03 secs Wed Feb 27 02:47
tail          wsines  ttyp0      0.03 secs Wed Feb 27 02:47
telnet        wsines  ttyp0      0.05 secs Wed Feb 27 02:47
csh       F   wsines  ttyp0      0.00 secs Wed Feb 27 02:47
rusers       X wsines ttyp0      0.08 secs Wed Feb 27 02:46
csh       F   wsines  ttyp0      0.02 secs Wed Feb 27 02:46
rwho          wsines  ttyp0      0.20 secs Wed Feb 27 02:46
w             wsines  ttyp0      0.31 secs Wed Feb 27 02:46
ps            wsines  ttyp0      0.62 secs Wed Feb 27 02:45
cat           wsines  ttyp0      0.08 secs Wed Feb 27 02:45
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:45
telnet        wsines  ttyp0      0.88 secs Wed Feb 27 02:37
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:37
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:36
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:36
telnet        wsines  ttyp0      0.11 secs Wed Feb 27 02:36
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:36
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:35
telnet        wsines  ttyp0      0.08 secs Wed Feb 27 02:35
telnet        wsines  ttyp0      0.06 secs Wed Feb 27 02:34
cat           wsines  ttyp0      0.03 secs Wed Feb 27 02:34
ls            wsines  ttyp0      0.16 secs Wed Feb 27 02:34
telnet        wsines  ttyp0      0.48 secs Wed Feb 27 02:30
telnet        wsines  ttyp0      0.14 secs Wed Feb 27 02:30
cat           wsines  ttyp0      0.05 secs Wed Feb 27 02:29
ls            wsines  ttyp0      0.14 secs Wed Feb 27 02:29
rm            wsines  ttyp0      0.05 secs Wed Feb 27 02:29
ls            wsines  ttyp0      0.22 secs Wed Feb 27 02:28
a.out         wsines  ttyp0      0.05 secs Wed Feb 27 02:27
a.out         wsines  ttyp0      2.88 secs Wed Feb 27 02:27
tail          wsines  ttyp0      0.06 secs Wed Feb 27 02:27
w             wsines  ttyp0      0.30 secs Wed Feb 27 02:27
wc            wsines  ttyp0      0.45 secs Wed Feb 27 02:27
a.out         wsines  ttyp0      1.39 secs Wed Feb 27 02:26
cat          X wsines ttyp0      0.06 secs Wed Feb 27 02:26
tail          wsines  ttyp0      0.06 secs Wed Feb 27 02:26
a.out         wsines  ttyp0      0.47 secs Wed Feb 27 02:26
cat          X wsines ttyp0      0.08 secs Wed Feb 27 02:26
grep          wsines  ttyp0      0.59 secs Wed Feb 27 02:26
rm            wsines  ttyp0      0.03 secs Wed Feb 27 02:25
compile       wsines  ttyp0      0.12 secs Wed Feb 27 02:25
ld            wsines  ttyp0      0.36 secs Wed Feb 27 02:25
as            wsines  ttyp0      0.72 secs Wed Feb 27 02:25
ccom          wsines  ttyp0      1.08 secs Wed Feb 27 02:25
cpp           wsines  ttyp0      0.25 secs Wed Feb 27 02:25
ftp           wsines  ttyp0      0.36 secs Wed Feb 27 02:24
telnet        wsines  ttyp0      0.14 secs Wed Feb 27 02:24
less          wsines  ttyp0      0.09 secs Wed Feb 27 02:23
less          wsines  ttyp0      0.06 secs Wed Feb 27 02:23
tftp          wsines  ttyp0      0.23 secs Wed Feb 27 02:23
tftp          wsines  ttyp0      0.23 secs Wed Feb 27 02:23
tftp          wsines  ttyp0      2.39 secs Wed Feb 27 02:14
telnet        wsines  ttyp0      0.66 secs Wed Feb 27 02:20
grep          wsines  ttyp0      0.52 secs Wed Feb 27 02:20
ls            wsines  ttyp0      0.11 secs Wed Feb 27 02:20
ls            wsines  ttyp0      0.11 secs Wed Feb 27 02:20
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:19
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:19
tail          wsines  ttyp0      0.08 secs Wed Feb 27 02:19
grep          wsines  ttyp0      0.41 secs Wed Feb 27 02:18
grep          wsines  ttyp0      0.41 secs Wed Feb 27 02:18
ls            wsines  ttyp0      0.11 secs Wed Feb 27 02:18
ls            wsines  ttyp0      0.12 secs Wed Feb 27 02:18
cp            wsines  ttyp0      0.03 secs Wed Feb 27 02:18
ls            wsines  ttyp0      0.05 secs Wed Feb 27 02:18
ls            wsines  ttyp0      0.06 secs Wed Feb 27 02:18
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:18
cat           wsines  ttyp0      0.06 secs Wed Feb 27 02:18
ls            wsines  ttyp0      0.41 secs Wed Feb 27 02:17
cat           wsines  ttyp0      0.05 secs Wed Feb 27 02:17
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:16
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:16
ls            wsines  ttyp0      0.06 secs Wed Feb 27 02:16
ls            wsines  ttyp0      0.06 secs Wed Feb 27 02:16
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:16
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:16
w             wsines  ttyp0      0.28 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.12 secs Wed Feb 27 02:15
grep          wsines  ttyp0      0.09 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.11 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.11 secs Wed Feb 27 02:15
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:14
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:14
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:14
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:14
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:14
ls            wsines  ttyp0      0.19 secs Wed Feb 27 02:14
ls            wsines  ttyp0      0.05 secs Wed Feb 27 02:14
whoami        wsines  ttyp0      0.12 secs Wed Feb 27 02:14
hostname      wsines  ttyp0      0.05 secs Wed Feb 27 02:14
tr            wsines  ttyp0      0.09 secs Wed Feb 27 02:14
tr            wsines  ttyp0      0.09 secs Wed Feb 27 02:14
sh            wsines  ttyp0      0.05 secs Wed Feb 27 02:14
sh            wsines  ttyp0      0.08 secs Wed Feb 27 02:13
stty          wsines  ttyp0      0.05 secs Wed Feb 27 02:14
checknew      wsines  ttyp0      0.19 secs Wed Feb 27 02:13
checknew      wsines  ttyp0      0.19 secs Wed Feb 27 02:13
ping          wsines  ttyp0      0.09 secs Wed Feb 27 02:13
telnet        wsines  ttyp0      0.11 secs Wed Feb 27 02:13
grep          wsines  ttyp0      0.09 secs Wed Feb 27 02:12
head          wsines  ttyp0      0.08 secs Wed Feb 27 02:12
ls            wsines  ttyp0      0.16 secs Wed Feb 27 02:12
tftp          wsines  ttyp0      0.30 secs Wed Feb 27 02:11
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:11
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:11
ls            wsines  ttyp0      0.08 secs Wed Feb 27 02:10
rm            wsines  ttyp0      0.06 secs Wed Feb 27 02:10
ls            wsines  ttyp0      0.09 secs Wed Feb 27 02:10
tftp          wsines  ttyp0      0.25 secs Wed Feb 27 02:10
telnet        wsines  ttyp0      0.14 secs Wed Feb 27 02:09
head          wsines  ttyp0      0.09 secs Wed Feb 27 02:09
head          wsines  ttyp0      0.09 secs Wed Feb 27 02:09
w             wsines  ttyp0      0.34 secs Wed Feb 27 02:09
telnet        wsines  ttyp0     28.88 secs Tue Feb 26 22:58
```