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How To Find and Overcome Shell Command Line Length Limitations

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Q. While using mv or rm command I get command line length error (Argument list too long error). How do I find out current running shell command line length limitations? How do I overcome these limitations while writing UNIX / BSD / Linux shell utilities?

A. All shell have / has a limit for the command line length. UNIX / Linux / BSD system has a limit on how many bytes can be used for the **command line argument** and **environment variables**. When you start a new process or type a command these limitations are applied and you will see an error message as follows on screen:



[1]

Argument list too long

How do I find out current command line length limitations?

Type the following command (works under Linux / UNIX / BSD operating systems):

```
$ getconf ARG_MAX
```

Sample output:

```
262144
```

BSD operating system also supports following command:

```
$ sysctl kern.argmax
```

Sample output:

```
kern.argmax=262144
```

To get accurate picture about limitation type the following command (hat tip to [Jeff](#) [2]):

```
$ echo $(( $(getconf ARG_MAX) - $(env | wc -c) ))
```

Output:

```
261129
```

How do overcome shell command line length?

You have following option to get around these limitations:

- Use find or xargs command
- Use shell for /while loop

find command example to get rid of "argument list too long" error

```
$ find /nas/data/accounting/ -type f -exec ls -l {} \;  
$ find /nas/data/accounting/ -type f -exec /bin/rm -f {} \;
```

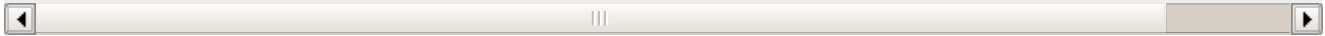
xargs command example to get rid of "argument list too long" error

```
$ echo /nas/data/accounting/* | xargs ls -l
```

```
$ echo /nas/data/accounting/* | xargs /bin/rm -f
```

while loop example to get rid of "argument list too long" error

```
ls -1 /nas/data/accounting/ | while read file; do mv /nas/data/accounting/$file /local/disk/
```



Alternatively, you can combine above methods:

```
find /nas/data/accounting/ -type f |
while read file
do
    mv /nas/data/accounting/$file /local/disk/
done
```

time command - give resource usage

Use time command to find out exact system resource usage for each command:

```
$ time find blah blah
$ time ls -1 blah | while read file; do #blah on $file; done
```

Further readings:

- **Your shell documentation**
- **man pages ksh, bash, getconf, sysconf, sysctl, find, and xargs**

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[1] Image: <http://www.cyberciti.biz/faq/faq/category/bash-shell/>

[2] Jeff: <http://www.digitalprognosis.com/>