

Re: 64-bit arithmetic in scripts?

Source: <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/questions/2004-10/0034.html>

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Date: 10/01/04

Date: Fri, 1 Oct 2004 12:56:14 +0400

Dan Nelson has kindly explained everything:

> *In the last episode (Oct 01), Andrew said:*

>> *Thanks! I haven't thought about using expr.*

>>

>> *How come that my expr(1) manpage has nothing to say about -e option?*

>> *In fact my expr(1) does not accept it. I have FreeBSD 4.10. I've*

just

>> *looked into a current manpage from www.freebsd.org, and it says*

>> *something about 4.x compatibility.*

>>

>> *What is the best way to go if I need to write scripts now, but I'm*

>> *planning to switch to 5.x later? Can I upgrade expr(1) now? If not,*

>> *what should I do?*

>

> *In 4.x, expr does 64-bit math by default. Apparently POSIX requires*

> *that expr use whatever the systems' "signed long" size is, so the*

> *default was changed for 5.x, and -e was added to get the old*

> *behaviour.*

>

> *If you want your script to work on both, you'll have to do a feature*

> *test. I started out just testing expr and expr -e, but it sort of*

> *grew... The following script will check the shell's math, two ways of*

> *calling expr, and finally fall back on calling bc. As long as you*

just

> *use the basic math operators, quote your "*"s, and put spaces between*

> *everything, all the methods should be compatible, and your script will*

> *work on any bourne-compatible shell :)*

>

> *#!/bin/sh*

>

> *if [x\${(65536 * 65536)} = "x4294967296"]; then*

> *shellarith() { echo \${(@\$)}; }*

> *MATH="shellarith"*

> *else*

> *if [x`expr 65536 "*" 65536` = "x4294967296"]; then*

> *MATH="expr"*

> *else*

> *if [x`expr -e 65536 "*" 65536 2>/dev/null` = "x4294967296"];*

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```
then
> MATH="expr -e"
> else
> if [ x`echo 65536 "*" 65536 | bc` = "x4294967296" ]; then
> bcfunc() { echo "$@" | bc ; }
> MATH="bcfunc"
> else
> echo "Can't do 64-bit math noway nohow"
> fi
> fi
> fi
> fi
>
> echo "Using $MATH"
> bigval=`$MATH 65536 "*" 65536`
> echo $bigval
```

Thank you very much! I think, I'll just assign MATH="expr" and change it to something else when I need it.

Best regards,
Andrew P.

freebsd-questions@freebsd.org mailing list

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