Re: Binary number digits <− > Decimal number digits

Source: http://sci.tech−archive.net/Archive/sci.math/2007−12/msg01911.html

- *From*: Adam <no@xxxxxxxx>
- *Date*: Sun, 09 Dec 2007 17:21:31 −0500

On Sun, 09 Dec 2007 16:44:00 −0500, Adam wrote:

> On Sun, 9 Dec 2007 07:39:24 −0800 (PST), fc wrote:
>
> > And: how to generalize for any decimal number of any length?
>
> Consider the following two 5−digit decimal numbers:
>
> expression decimal number bits required
> 2^16 − 1 65,535 16
> 2^16 + 2^14 81,920 17
>
> 5 * log(10) / log(2) = 16.6
>
> Round up or down comes into play again.

It's even messier than that:

expression decimal number bits required

none 10,000 14
2^14 16,384 15
2^15 32,768 16
2^16 + 2^14 81,920 17

Adam

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