Re: Cantor Confusion

Source: http://sci.tech−archive.net/Archive/sci.math/2007−03/msg03473.html

- *From*: mueckenh@xxxxxxxxxxxxxxxxx
- *Date*: 16 Mar 2007 03:52:30 −0700

On 16 Mrz., 01:31, Virgil <vir...@xxxxxxxxxxx> wrote:

> In article <1173954799.919385.61...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
>
> For even binary trees (where even here means all paths are of equal length),

Only those are under discussion here.

> the number of paths increases exponentially with number of levels (lengths of a path). Adding 1 to the number of levels doubles the number of paths.
>
>> The tree is continuous because its nodes are connected by paths.
>
> That is a distinctly non−standard meaning for "continuous" in mathematics.

It shows, however, that the number of paths cannot jump from finite to uncountable.

> And nodes are connected by edges, not paths.

Correct. Nodes ae connected by edges. But as these edges are elements of paths, nodes are also connected by paths.

>> There
>> is never more than the factor 2. There are no interruptions possible

> and no jumps from "finite" to "uncountable". Your claim would require that.

> When one takes what WM calls the 'union' of all his finite binary trees,

− meanwhile you should have learned this definition −

> one has one such tree of n levels for each member n of N, which N is itself not finite, so that the union cannot be finite either.

As very element of the union is finite, every path is finite.
"Infinite" means here only "finite numbers of nodes and finite numbers of separeted paths growing from level to level without end".