

## Re: Can nanotech make routers obsolete?

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**From:** Phillip Thorne ([thorne\\_at\\_underbase.org](mailto:thorne_at_underbase.org))

**Date:** 09/07/04

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On 21 Aug 2004 "John Doe" <[do\\_not\\_spam\\_me@nospam.org](mailto:do_not_spam_me@nospam.org)> reported:  
>*Switches and routers will eventually become obsolete because of bottleneck*  
>*of the optical to electrical conversion.*  
><http://gruia.blogware.com/blog/archives/2004/8/20/127361.html>

[Researchers at Canada's Carleton University (Wayne Wang, Connie Kuang) and U Toronto (Ted Sargent) develop a polymer-buckyball material that acts as an optical switch.]

Okay, so I took a CCNA course a year ago; I should be qualified to address this...

A router is a device that stands between two networks and translates between their local addressing schemes. Local addressing exists because (a) address spaces are typically limited and (b) even if they're not, it's convenient to have local control. They can also be used to segment a network, producing (a) smaller broadcast domains; and unlike switches or bridges, provide (b) flexible logical addressing, and (c) better admin tools.

(Network devices have a hardware address ("MAC"), which is assigned by the manufacturer from a block allocated by a larger standards body. Logical addressing, such as IP or Novell, acts above that. 32-bit IPv4 naming is limited to approx. one billion logical addresses; many fewer because of the way they're allocated. Small separate networks permit the reuse of addresses without ambiguity. 64-bit IPv6 provides more addresses than anyone will ever need --- probably --- but it's *\*still\** convenient to have local control.)

Any solution to the electronic-optical bottleneck is a threat to *\*electronic\** routers, not *\*routers\** per se.

>*How will players like CSCO, EXTR, FDRY respond to the above threat?*

I should imagine they will adopt the optical switching technology into a future generation of products, and write new marketing copy trumpeting the improved performance.

sci.nanotech: Re: Can nanotech make routers obsolete?

Naming by NASDAQ symbol? Cisco, Extreme Networks, Foundry Networks.  
(Thanks, Google.) Odd -- I'd do that in a networking group, but here  
in sci.nanotech it's likely to confuse readers.

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