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## Internet Pioneer Rolls Out Faster, Greener Router

By [Larry Barrett](#)  
August 7, 2007

Larry Roberts built it. They came. Now he's back to make it even better.

A decade before any of the YouTube co-founders were even born, long before the advent of the Web browser or even the VCR, Larry Roberts made his mark as the leader of a small team of visionaries that designed and developed ARPAnet, the world's first computer packet network.

Today, we call it the Internet.

You could say that a few things have changed since 1969 when Roberts, Leonard Kleinrock, Robert Kahn and Vinton Cerf first managed to connect a whopping total of four computers to this landmark network. Back in the day, Roberts and his team never even considered the possibility of transmitting live video content over the network.

Now hundreds of millions are logging on to share videos, watch movies, make phone calls and check e-mail from their homes, offices and numerous wireless devices, pushing the broadband infrastructure that makes it all possible to its limit.

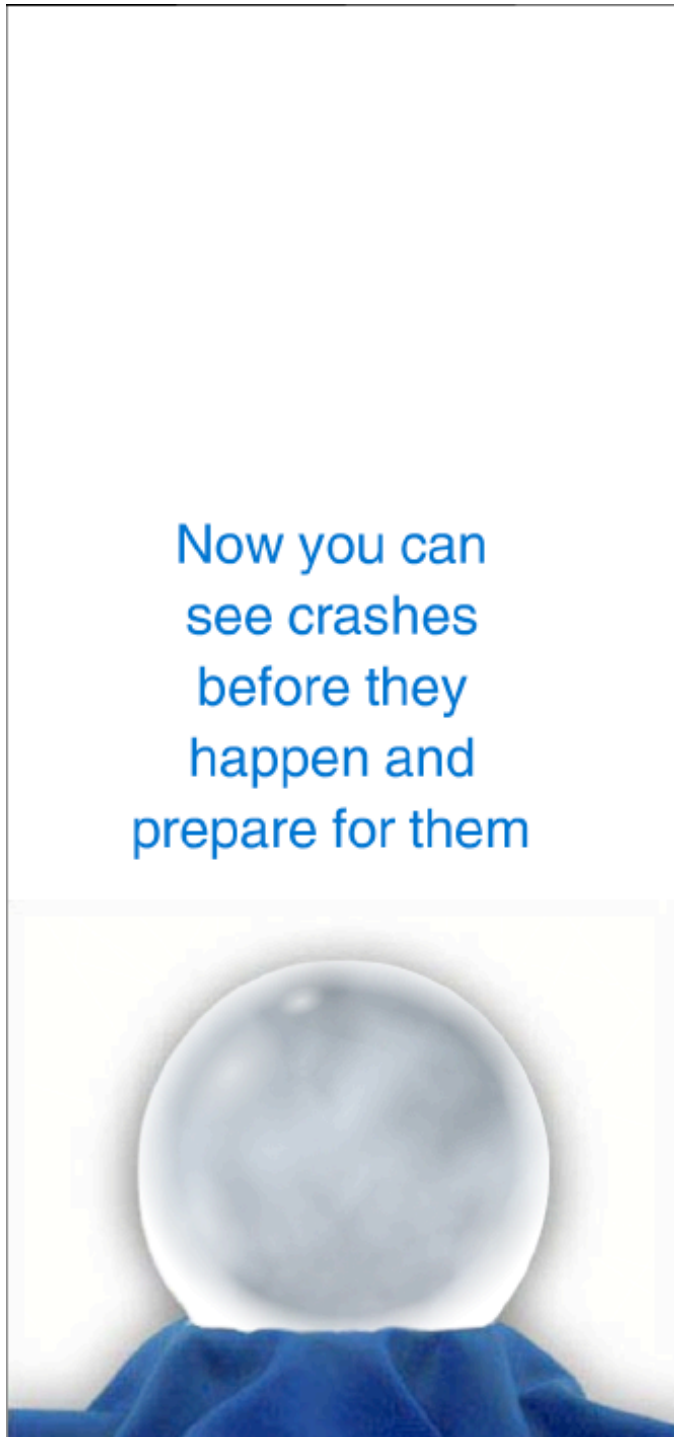
Yet despite the staggering evolution of the Internet in size and scope, the basic technology and techniques used to route and queue all these data packets has remained virtually unchanged since Roberts et al. broke the ice more 40 years ago.

But that all changed Monday when Roberts' new company, Anagran, unveiled its FR-1000 Flow Router. It's the company's first product and it was designed specifically to eliminate the annoying fits and starts that often accompany video and voice delivery on the Internet.

By managing traffic and forwarding packets based on flows rather than individual packets, the FR-1000 can deliver video and voice in an uninterrupted flow and provide service providers with a much more transparent view of all the incoming and outgoing traffic on their networks.

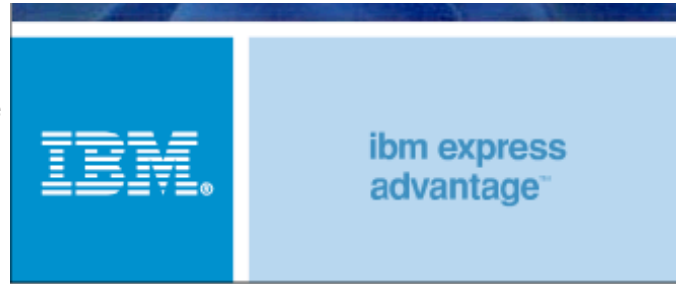
"This is unique because it basically trades memory for route-processing cycles," Jerry Murphy, an analyst at Westport, Conn.-based Robert Francis Group, told *internetnews.com*. "The net effect of that is that it significantly

Now you can  
see crashes  
before they  
happen and  
prepare for them



speeds up a large portion of the traffic that goes through a router."

Murphy said the FR-1000 queries a routing directory that determines the most efficient route to transmit data between two IP addresses rather than repeatedly running route-processing cycles that slow delivery and consume more energy. The router can distinguish between streaming video and individual packets such as e-mail so that the video content is routed in a continuous flow.



A typical Fortune 1000 company or Internet service provider will have hundreds to thousands to millions of flows moving simultaneously through its datacenters.

Dan O'Farrell, vice president of marketing at Anagran, told *internetnews.com* the FR-1000 reduces the amount of energy used by each router by at least 80 percent.

"It's just a by-product of the architecture," O'Farrell said. "We've done away with the traditional approach of using ASIC for primary routing and queuing. We only route the first piece of the data. After that, the rest is just switched through."

O'Farrell says enterprise customers can expect to pay between \$50,000 and \$100,000 per router.

The Merit Network, a nonprofit organization designed to implement a computer network between public universities in Michigan, and Lmbdanet, Northwestern University's high-speed video network, are both testing the FR-1000 router, O'Farrell said.

"It's the next logical step the network has to make," he continued. "The bar has been set very high by the quality of cable TV. Everyone likes 30-second video snippets, but if you want HD-quality for large data packets over the Internet, you have to change the way it's routed."

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