

Kermit helps households monitor and manage their internet speed

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Kermit

For years, the relationship between Internet service provider and home user has been a simple, all-you-can-eat model: Pay a flat monthly fee and enjoy all the broadband you want, every byte of which streams at those fantastic speeds the ISPs advertise. Right?

Maybe, maybe not. Now, as the nation's largest providers prepare to implement usage-based pricing plans, a tool created by Georgia Tech researchers could empower consumers to ensure they are getting the service they are paying for.

Developed by Beki Grinter, an associate professor in Georgia Tech's

School of Interactive Computing, and her team, Kermit is an easy-to-use application that allows users to monitor and control network usage within their home environment, including measuring the actual network speed made available by their Internet service providers (ISPs) and tracking bandwidth usage over time.

“I think it’s widely recognized now, and the FCC is [aware], that people are not getting the speeds that are sometimes advertised,” Grinter said. “What Kermit does is it makes that very visible to people in their homes.”

Kermit is being presented Wednesday, May 11, at the CHI 2011 Conference on Human Factors in Computing, held in Vancouver. The paper it is based on, “Why Is My Internet Slow? Making Network Speeds Visible,” was one of 13 to be awarded CHI 2011 Best Paper.

Kermit works by showing the user a simple view of all the home’s devices connected to the Internet: computers, mobile devices, digital video recorders, game systems or anything else that’s networked. Users can rename their devices, or label them with photos to show what they are. At any moment, Kermit can not only show who’s using the Internet, whether through a desktop or mobile device, but it can also limit a device’s speed. The user can even limit or prioritize a specific machine’s traffic.

To test the system, researchers recruited a select number of users, most of whom were not overly savvy with computers or networking technology, to take Kermit home and try it out.

“Even people who were not Internet gurus tried to do this,” said Kermit developer Marshini Chetty, a Ph.D. candidate at Georgia Tech and first author of the CHI paper. “With one husband-and-wife couple, the wife actually limited her husband’s machine because she worked from home.

Before, she wouldn't have gone to the router Web interface to do that, but because Kermit made it easier for her, she was feeling more comfortable to do it. Of course, her husband didn't really like that."

In addition to providing real-time information, Kermit allows users to view historical data on their Internet connection such as how much bandwidth different machines use over time, making it easier to spot patterns

"After we gave them Kermit, they were able to see the speeds over time," Chetty said. "So, by the end of the study, they started to question: 'Am I getting what I paid for?' Or they knew a little bit more about it and realized, yes, they were actually getting what they paid for. I think Kermit was successful in actually making them more informed about these issues, which is one of our goals."

Study participants also had some of their own ideas for Kermit.

"A lot of parents said that they would like to use Kermit to schedule access for their kids," Chetty said. "In one household, for example, a mom and dad talked about how their son always used the Xbox past midnight, and they didn't want to stay up to make sure he stopped because they had to get up for work the next day. So they saw a use for Kermit to basically set up a time restriction so that their son would automatically be cut off at midnight."

For the next study, the researchers plan to implement some of the suggestions participants made such as the ability to cut off specific users' access completely. They also plan to develop more tools to help users track and manage their bandwidth usage – a feature that's increasingly more important as ISPs introduce data caps on home Internet connections.

Provided by Georgia Institute of Technology

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