

# Cyberspace Slowdown?

*Host contacted. Waiting for reply...*

For web surfers at Ohio University, that frustrating message can be all too familiar.

In spite of the hype, the information superhighway often seems more like a Los Angeles freeway than the Autobahn.

Why all this trouble with congestion? After all, over eighty percent of Americans own a telephone, and most calls go through on the first try.

The answer involves a fundamental difference in the way telephones and computers transmit data.

## Telephones vs. Computers

Telephone conversations are dedicated connections—when you call someone, the circuit between your two phones is used for that conversation only. Until you hang up, no one else can send information along that particular line. In rare instances—like a natural disaster—all circuits may be busy, but the circuits will always run at “full speed”.

Internet connections, on the other hand, use shared pathways. Hundreds or even thousands of computers often communicate over the same line.

To make this sharing possible, data must be broken into small units called packets and sent in the free air space between other computers' transmissions.

When a large number of computers transfer data across a shared link at the same time, the free air space available for each user to send packets shrinks, and transfer speeds drop for everyone. Graphic-

intensive Web browsing is especially guilty in this arena.

## The Right Time and the Right Place

Internet congestion is by far the most common cause of poor network performance. Unfortunately, it also is the most difficult to avoid.

Doing your Internet transfers early in the morning or late at night can provide some relief, as will choosing a host that is geographically close to Athens. The farther your data must travel to reach you, the more likely it will encounter a congested link along the way.

## Mirror, mirror, on the Net...

Many popular Internet sites offer alternate locations called *mirrors*. These systems provide exact replicas of their master sites—mirror images, so to speak. Most mirrors are updated several times a day, and they normally have much better response times than their master

## More Internet Capacity on the Way

If you use the Internet at all on campus, you probably have noticed that connections with the “outside world” have slowed dramatically in the past year. This slowdown is largely the result of increased traffic, both at Ohio University and on the Internet as a whole.

In response to this problem, CNS has ordered a second digital Internet link from OARNet, Ohio University's Internet service contractor.

## How does this affect the network?

When the new link comes on-line, Ohio University will effectively double its data transfer capacity to and from the outside world. This added capacity should make it easier to reach remote hosts during peak hours.

Still, the new link is not a panacea. The Internet is a crowded place, and many remote hosts will continue to be slow and/or hard to reach.

*For more information on why the Internet can be slow, see the related story Cyberspace Slowdown.*

sites. You can often cut your transfer times in half by choosing a strategically located mirror site.

## Problems On-Campus

Services internal to Ohio University, like ALICE, Oak, and the University web servers usually are immune to Internet congestion. As long as data remains entirely within the campus network, transfer rates should be quite high.

Still, slowdowns do happen. Multi-user systems like ALICE, Oak, and ALL-IN-1 have limited resources. If a large number of people are logged on at the same time, these systems can become sluggish.

Also, some campus host services depend on the Internet to provide their data. For example, using Lynx from an Oak account to view a Web site in Australia is likely to be slow, even though the connection between your machine and Oak is free of traffic.

