<u>Communications & Network Services Monthly Report – October, 2006</u>

The majority of Millersville's ResNet and Administrative network connections offer 100 Mbps speed. This compares to a typical home broadband DSL connection of 768 Kbps to 1.5 Mbps or a dial-up connection of 56 Kbps. The entire campus, with the exception of most of the smaller houses, is primarily a "switched" network that provides the 100 Mbps speed to each connection. The campus wireless network is a shared "G" network providing wireless connection speeds up to 54 Mbps. The entire campus shares a 60 Mbps connection to Internet 1 and a 10 Mbps connection to Internet 2. Traffic to and from the Internet can "burst" above these speeds briefly due to quality of service measures provided the State System Network (SSHENET).

Overall, the numbers for October look similar to September's traffic. This is typical & should remain so through November, with the peak traffic occurring in December.

Note that not all traffic reported by a campus building is Internet traffic. Communications to services such as shared servers, MyVille, MyMU, MAX, and campus email (Outlook and Marauder) remain on campus and do not affect Internet usage.

The following outages occurred during the month:

10/15/2006

Planned & announced outage while Cisco 6509 Campus Network Router was replaced with a 4506 from 09:00 to 10:00. Only affected campus administrative & academic buildings, NOT ResNet or Server network, or access to SSHEnet/Internet.

October, 2006 Campus Network Usage

Mbps	Inbound Avg.	Outbound Avg.	Inbound Max.	Outbound Max.
Campus Core - Internet	27.06	5.82	55.59	35.44
Argires	4.64	2.39	15.37	46.63
Byerly	0.17	0.04	1.09	0.42
Hash-Bassler	0.18	0.05	3.99	3.26
Duncan	0.40	0.18	4.57	5.92
Dutcher	<.01	<.01	0.04	<.01
BEC	0.12	0.03	1.54	0.22
Wickersham	<.01	<.01	0.11	0.13
ResNet Core	17.08	2.68	39.97	13.12
Bard	1.01	0.28	5.71	2.67
Gaige	2.02	0.46	7.73	5.45
Gilbert	1.36	0.31	7.32	5.13
Harbold	1.46	0.40	6.61	1.59
Diehm	1.81	0.47	9.69	3.77
Hobbs	1.48	0.43	5.59	3.01
Hull	1.42	0.40	7.11	5.63
Shenks/Reighard	3.25	0.73	15.80	9.94
Burrowes	2.54	0.62	12.85	4.18
Lenhardt	2.32	0.70	7.73	4.56

Definitions of Terms

Bit

Short for binary digit, the smallest unit of information on a machine. The term was first used in 1946 by John Tukey, a leading statistician and adviser to five presidents. A single bit can hold only one of two values: 0 or 1. More meaningful information is obtained by combining consecutive bits into larger units. For example, a byte is composed of 8 consecutive bits.

Byte

Abbreviation for binary term, a unit of storage capable of holding a single character. On almost all modern computers, a byte is equal to 8 bits. Large amounts of memory are indicated in terms of kilobytes (1,024 bytes), megabytes (1,048,576 bytes), and gigabytes (1,073,741,824 bytes).

Kilobit

1,024 bits for technical purposes, such as data storage. 1,000 bits for general or summary estimate purposes. Data transfer rates (such as file downloads) are measured in kilobits per second, abbreviated as Kbps, and count a kilo as 1,000 bits.

Megabit

(1) When used to describe data storage, 1,024 kilobits.
(2) When used to describe data transfer rates, it refers to one million bits. Networks are often measured in megabits per second, abbreviated as Mbps.

DSL

Digital Subscriber Line - DSL technologies use sophisticated modulation schemes to pack data onto existing copper telephone lines. They are sometimes referred to as last-mile technologies because they are used only for connections from a telephone switching station to a home or office, not between switching stations. DSL requires short runs to a central telephone office (usually less than 20,000 feet). Most home DSL connections are ADSL, short for asymmetric digital subscriber line. ADSL supports data rates of from 1.5 to 9 Mbps when receiving data (known as the downstream rate) and from 16 to 640 Kbps when sending data (known as the upstream rate).

ADSL requires a special ADSL modem.

Cable vs. DSL: The Speeds

The topic of "which is better and faster" has been a highly debated topic, and still there doesn't appear to be a clear winner. DSL offers users a choice of speeds ranging from 144 Kbps to 1.5Mbps. Cable modem download speeds are typically up to 2 times faster than 1.5Mbps DSL, but the reason there is no clear speed winner is because cable technology is based on shared bandwidth, with many factors influencing a users download speed. With shared bandwidth the speed fluctuates depending on the number of subscribers on the network. With DSL, the connection is yours and not shared, and you tend to have a more constant speed. This is one reason why cable Internet providers don't often publish speed information. In more rural areas with fewer subscribers, you're bound to have faster download speeds than a subscriber in a metropolitan center. Because cable modem speeds fluctuate, it is difficult to gauge an exact download speed. On the upload stream, however, cable and DSL are closely matched for speed. Both DSL and cable Internet speeds are largely dependant on the service provider and either the distance away from the switching station you are or how many subscribers are in your immediate area.

Source: webopedia.com