

## **Communications & Network Services Monthly Report – August 2008**

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 an 80 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).

MU network's uptime was 100% since there were no university-wide network outages for the month.

Campus administrative & academic building's network uptime was 99.99% due to unplanned outages in Dilworth and Gordinier.

ResNet's network uptime was 100% since there were no network outages for the month.

## August 2008 Network Uptime

<b>Millersville University Network Uptime</b>				
Uptime Monitoring		Year	Outages	AVG Uptime (%)
Since:	9/1/2007	2008	0	100.000%
Outages:	0	2007	0	100.000%
AVG Uptime:	<b>100.000%</b>			
Year	Month	Outages	Downtime	Uptime (%)
2008	August	0	0	100.00%
2008	July	0	0	100.00%
2008	June	0	0	100.00%
2008	May	0	0	100.00%
2008	April	0	0	100.00%
2008	March	0	0	100.00%
2008	February	0	0	100.00%
2008	January	0	0	100.00%
2007	December	0	0	100.00%
2007	November	0	0	100.00%
2007	October	0	0	100.00%
2007	September	0	0	100.00%

<b>Campus Administrative &amp; Academic Building's Network Uptime</b>				
Uptime Monitoring		Year	Outages	AVG Uptime (%)
Since:	9/1/2007	2008	15	99.981%
Outages:	19	2007	4	99.978%
AVG Uptime:	<b>99.979%</b>			
Year	Month	Outages	Downtime	Uptime (%)
2008	August	2	20 min	99.99%
2008	July	1	1 hr 40 min	99.99%
2008	June	4	5 hr 12 min	99.98%
2008	May	0	0	100.00%
2008	April	4	20 hr 24 min	99.93%
2008	March	3	7 hr 12 min	99.97%
2008	February	0	0	100.00%
2008	January	1	2 hours	99.99%
2007	December	0	0	100.00%
2007	November	0	0	100.00%
2007	October	4	24 hr 43 min	99.91%
2007	September	0	0	100.00%

<b>ResNet's Network Uptime</b>				
Uptime Monitoring		Year	Outages	AVG Uptime (%)
Since:	8/1/2007	2008	2	99.974%
Outages:	3	2007	1	99.993%
AVG Uptime:	<b>99.983%</b>			
Year	Month	Outages	Downtime	Uptime
2008	August	0	0	100.00%
2008	July	0	0	100.00%
2008	June	1	23 min	99.99%
2008	May	0	0	100.00%
2008	April	0	0	100.00%
2008	March	0	0	100.00%
2008	February	0	0	100.00%
2008	January	1	22 hr 40 min	99.80%
2007	December	0	0	100.00%
2007	November	1	3 hr 30 min	99.97%
2007	October	0	0	100.00%
2007	September	0	0	100.00%

## Downtime Reports

### MU's Network

NTR

### Campus Administrative & Academic Building's Network

- 8/29/08 Dilworth and Gordinier were offline from 16:30 to 16:50 due to a command error entered into the running configuration of the building switches.
- 7/3/08 Breidenstine Hall was offline from 05:00 to 06:40 during a planned & announced network outage to replace the building switches.
- 6/9/08 Dilworth Building was offline from 15:18 to 15:46 due to an uplink malfunction on the communication lines.
- 6/2/08 Biemesderfer Executive Center and Delaware House were offline from 08:00 to 10:08 due to malfunctioning hardware.
- 4/30/08 Perry House was offline from 11:25 - 12:25. Replaced the media converters in Franklin and Perry Houses and the network reconnected.
- 4/17/08 Biemesderfer Football Stadium was offline from 13:31 to 04/18/2008 at 07:25 due to the media converter for the uplink being inadvertently powered off during setup for Spring Commencement.
- 4/16/08 Breidenstine Hall was offline from 15:00 to 15:20 to replace a failing media converter on the uplink.
- 4/7/08 Perry House was offline from 09:55 - 11:05. Rebooted the media converter in Perry House and the network reconnected.
- 3/31/08 Perry House was offline from 11:20 - 14:20. Rebooted the media converter in Franklin House (interconnects with Perry House) and the network reconnected.
- 3/11/08 Perry House was offline from 11:27 - 13:27. Rebooted the media converter in Perry House and the network reconnected.
- 3/10/08 Washington House was offline from 09:08 - 09:20. Brief power outages over the weekend due to high winds caused the switch in Washington House to lose power & not reboot. Disconnecting & reconnecting the circuit restored power.
- 3/6/08 Jenkins Center in Jefferson Hall was offline from 15:00 - 17:00. Network equipment was mistakenly removed from the building in preparation for Athletics, but it was forgotten that Jenkins Center still needed network access.
- 1/02/08 Osburn VLAN was down due from 0730 - 0930 due to a command error in the running config after an IOS upgrade on the osbur-master switch.

- 10/30/07 The port on the smc-master downlinking to the rest of the building equipment was misconfigured at 15:45. It was restored to the proper configuration at 9:15 on 10/31/2007. Total downtime 17 hours, 30 minutes.
- 10/18/07 Power was turned off by Campus Electricians during building renovations in Dutcher Hall that affected the network equipment from 10:23 to 11:36 (1 hour 13 minutes).
- 10/14/07 Switch boyer-svrr1-02 apparently lost power from 11:45 to 17:15 (5 hours 30 minutes), which prevented several servers from being accessed.
- 10/8/07 All buildings routed out of osburn-master were offline for approximately .5 hour from 11:02 to 11:29 due to a port channel configuration error.

### **ResNet's Network**

- 6/17/08 Harbold Hall was offline from 13:42 to 14:05 when an electrician working on the building electrical upgrade project turned off the breaker supplying power to the Telecomm Room.
- 1/29/08 A student in Diehm Hall lost network connectivity at 11:20. By 15:00, 7 students with Vista PCs in Diehm Hall had lost connectivity. Traced the problem to a Nintendo Wii and was able to disconnect the offending machine on 1/30/08 at 10:00. In all, the problem affected approximately 12 student Vista PCs. Total down time for the 12 students was 22 hours and 40 minutes.
- 11/17/07 The burro-5fl-master switch was down from 14:00 to 17:30 due to water leaking onto switch and shorting the switch out.
- 8/2/07 ResNet & the wireless network were down from 15:00 to 16:00 as part of the ResNet Split project.

## 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*