



## Merit Network Direct Connect Bandwidth Usage Statistics

Merit's Direct Connect Bandwidth Usage Statistics provides Members and Affiliates with the information they need to ensure that their Internet connectivity is meeting their organization's needs.

How to Find Bandwidth Usage Statistics:

1. From the Merit website, <http://www.merit.edu>, click the "Member Portal Login" Link.

The arrow in Figure 1 shows the location of the link.

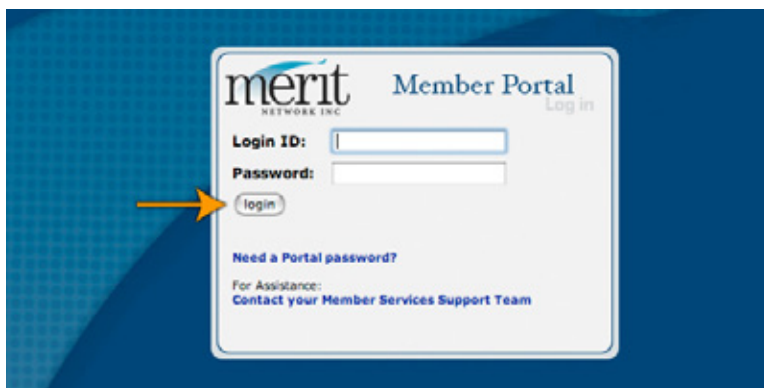
Figure 1



2. Log into the Member Portal using your Member Portal Login ID and Password. If you do not have a portal account, you can request a portal password by clicking the "Need a Portal Password?" link.

See Figure 2 for location of the link.

Figure 2

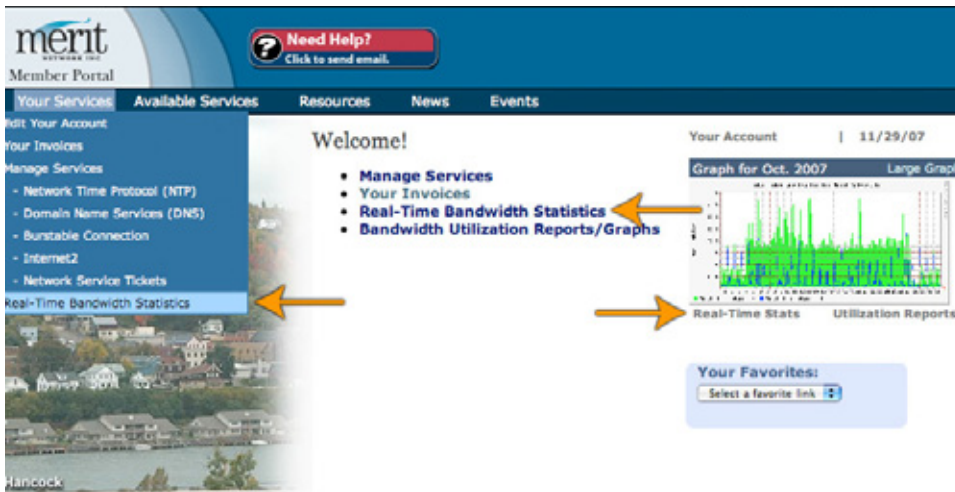




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3. On the main Member Portal page, you can access the Bandwidth Usage Statistics from three locations: 1. In the dropdown menu under “Your Services,” click the “Real-Time Bandwidth Statistics” link; In the middle of the page, you can click the “Real-Time Bandwidth Statistics” link; and on the right side of the page below the graph image, click the “Real-Time Stats” link.

Figure 3



4. On the Statistics page, select the interface that you want to view statistics for by checking the box next to the interface name. You can either select the “Last 48 Hours” or specify a starting date. Then click the “Submit” button to view the statistics graph.

Figure 4

Router	Interfaces	Description
MITC-MDF-ETHSW1	<input type="checkbox"/> gigabitethernet1_0_6	Link to MITC-MDF-ETHSW2; GE1/1
MITC-IDF2-ETHSW1	<input type="checkbox"/> gigabitethernet1_0_8	Link to MITC-IDF2-ETHSW1
MITC-IDF2-ES7	<input type="checkbox"/> gigabitethernet2_0_6	Link to MITC-IDF2-ES7

Select one of the following options. Please also specify a starting date if that option is selected. The resulting graph will cover the date range from the day selected to today. The format of the date is MMM DD, YYYY. The month can be in either upper or lower case.

Last 48 hours  
 Specify a Starting Date  
 Please enter a Starting Date:





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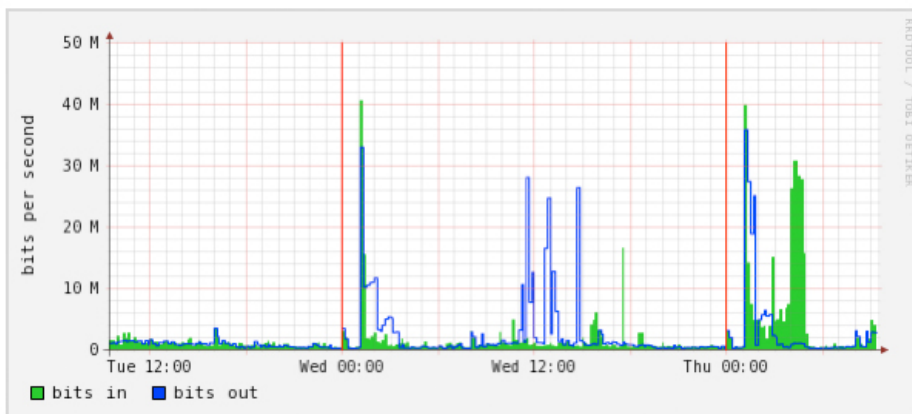
5. The bandwidth usage statistics graph will then be displayed as shown in Figure 5.

*Figure 5*

**MichNet Statistics for MITC-MDF-ETHSW1:gigabitethernet1\_0\_6 [Link to MITC-MDF-ETHSW2:GE1/1]**

**Date: Nov 29, 2007**

**Graph range: Last 48 Hours**



### Interpreting the Graph

There are two different types of graphs that can be generated. First, an hourly graph that displays the last 48 hours and second, a graph that displays a specific date range. Both types of graphs use today's date and current time as the ending date. The elements of the two types of graphs are described below, with differences noted where appropriate.

#### Bits per Second

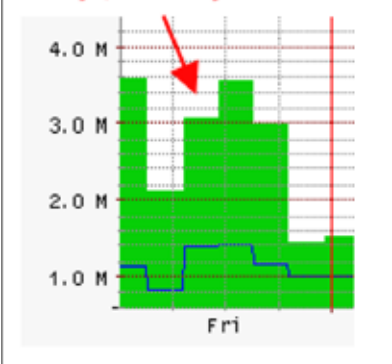
The Y-axis displays the bits per second traveling through the interface. The graph will create an appropriate size/scale, based on the largest value on the graph.

#### Bits In and Out

Whether data is flowing "in" or "out" of the interface is based on the perspective of the router. An example graph is shown in Figure 5.

The "in" traffic (shown in green) represents traffic coming from the Merit Backbone and the rest of the Internet into the router, via the serial interface.

Each data point on a "Specify Starting Date" graph represents the maximum value from a two-hour time block, or, for data spanning more than 50 days, a one day time block.





## Interpreting the Graph (Continued)

In most cases, this traffic will then pass through to the Ethernet interface, and then on to the Affiliate's local area network (LAN). The "out" traffic (shown in blue), represents traffic going from the router out to the Merit Network Backbone and the rest of the Internet, via the serial interface.

## Bits In/Out or Max Bits In/Out

### 48-Hour Graphs

Each data point on a "48-hour" graph for Affiliate equipment interfaces is taken from a 10-minute sample. Each data point on the 48-hour graph for Backbone equipment interfaces is taken from a 5-minute sample. The actual time of the sample interval will vary depending on the processor load of the collector and the response time of the device. For each sample, the number of bits passing through that interface is divided by the actual time interval of the sample to obtain the bits per second value. All data points are graphed.

### Specify Starting Date Graphs

For the time periods greater than 48 hours, the "Specify Starting Date" graph displays maximum values. If the graph covers approximately 50 days or fewer, each point on the graph represents the maximum of the values over a 2 hour period. If the samples are taken at 10-minute intervals, then each point represents the maximum of the 12 samples. For time periods longer than 50 days, each point on the graph represents the maximum value for a day.

If a graph is generated that covers a relatively short time period, each data point will represent a two-hour time block and the graph will not be smooth. For example, if you ask for a 3-day graph, there will only be 72 hours available, so 36 data points for the entire graph.

### Dividing Lines

In general, a dark red vertical line separates major time divisions within each graph.

### 48-Hour Graphs

The dark red vertical line marks the start of a new day.

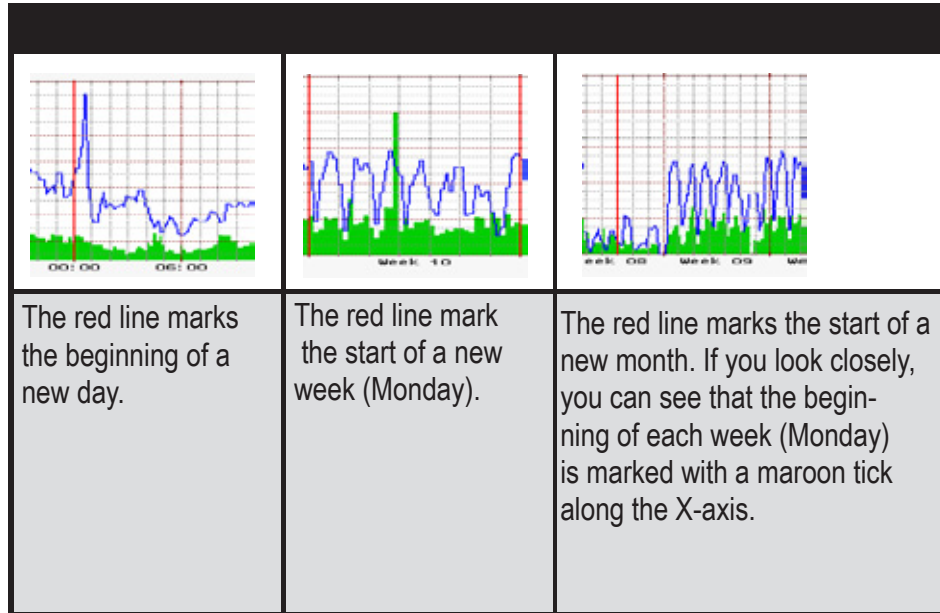
### Specify Starting Date Graphs (Figure 6)

If the date range is less than a week, the dark red vertical line marks the start of each day. If the range is greater than a week, but less than one month, the dark red vertical line marks the start of a new week (each week starts on a Monday). If the date range is longer than one month, the dark red vertical line marks the start of a new month.



## Merit Network Direct Connect Bandwidth Usage Statistics

Figure 6



### Interpreting the Graph

#### 48-Hour Graphs (Figure 6)

The “48-hour” graph shows the time along the X-axis in military time, where 00:00 is midnight, 06:00 is 6 AM, 12:00 is noon and 18:00 is 6 PM. All times are Eastern Standard time.

#### Specify Starting Date Graphs (Figure 6)

The “Specify Starting Date” graphs show the time along the X-axis in days, weeks, or months, depending on the total time period covered in the graph. The weeks are numbered within the year, so Week 1 is in January. Each week starts on a Monday.