Finnish national E2E performance survey 2010

Report

Produced by CSC/Funet led working group on AccessFunet

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Background

Following on from the survey carried out in 2009, this report is based on EARNEST [1] recommendations for carrying out an annual survey on the performance of campus networks. The report contains a summary of the survey results.

The survey and results

The survey was performed using the Webropol tool [2], which allowed respondents to reply using a web browser. This was done to make responding to the survey straightforward and attractive.

The campus network survey was advertised in November and December 2010 in the monthly Funet newsletter, distributed to all Funet member organisations. The survey was also advertised at Funet conference in December 2010. The response rate was 16.8%. Of the respondents, 53.8% came from universities and 38.5% from universities of applied sciences.

The first questions charted the size of the campus networks of the respondents (Figure 1). In terms of the number of users, the majority of campus networks have several thousand end users.

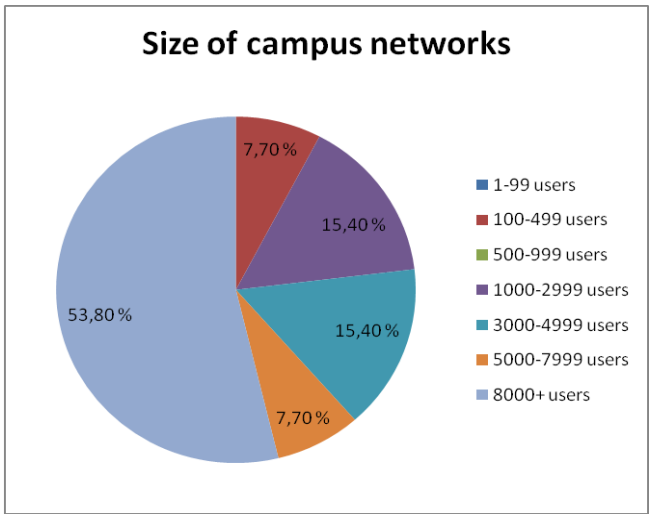

Figure 1. Respondents' campus network size by number of users

The following questions focused on the number of ports on campus networks and the connection speeds offered to end users (figures 2 and 3).

All respondents used ports with a speed of less than or maximum 100Mbit/s. The majority had fewer than ten thousand 100Mbit/s ports in use.

All respondents also had 1Gbit/s ports on their networks. In terms of the number of 1 Gbit/s ports, 69.2% had fewer than a thousand ports and 30.8% fewer than ten thousand.

100% of the respondents also used 10Gbit/s ports. The number of ports was fewer than ten for 55.6% of the respondents, and fewer than one hundred for the remaining 44.4%. None of the respondents had more than one hundred 10Gbit/s ports.

Speed/number	<10	<100	<1,000	<10,000	10,000+
<100 Mbit/s	28.60%	57.10%	0.00%	14.30%	0.00%
100 Mbit/s	0.00%	7.70%	0.00%	69.20%	23.10%
1 Gbit/s	0.00%	7.70%	61.50%	30.80%	0.00%
10 Gbit/s	55.60%	44.40%	0.00%	0.00%	0.00%

Figure 2. Number of ports on campus network

The ports available to end users (figure 3) were in proportion to the total number of ports.

Speed/number	<10	<100	<1,000	<10,000	10,000+
<100 Mbit/s	0.00%	60.00%	0.00%	40.00%	0.00%
100 Mbit/s	0.00%	7.70%	7.70%	84.60%	0.00%
1 Gbit/s	15.40%	30.80%	23.10%	30.80%	0.00%
10 Gbit/s	75.00%	25.00%	0.00%	0.00%	0.00%

Figure 3. Ports available to end users

The next questions concerned the speed of the backbone network. All respondents had a backbone network speed of at least 1Gbit/s and 46.2% had a speed of at least 10Gbit/s.

This was followed by questions relating to the Funet connection: whether there is a need to update or duplicate the connection.

30.8% felt that the current connection would require updating during 2011 or 2012, with 69% estimating that updating would become relevant after 2013.

Only 23.1% of the respondents had a duplicated Funet connection. However, all respondents said that they had been planning duplication; some said implementation would already be possible and is included in plans for the near future.

Conclusions and remarks

The results of the survey indicate that both large and small organisations were among the respondents. The principal connection speeds offered to end users appear to be 100Mbit/s and 1Gbit/s. The speed of the backbone network is higher, i.e. 1Gbit/s or 10Gbit/s.

Compared to the 2009 survey, the number of 10Gbit/s ports is on the increase. A genuine need for such port speeds has begun to emerge, while hardware prices have gone down as the technology becomes increasingly common. It is likely that 100Mbit/s ports will continue to reduce in number and that more and more users will have access to a 1Gbit/s connection.

Funet's ability to offer high-speed connections (1Gbit/s, 10Gbit/s) has prompted several Funet members to update their subscriptions to speeds of at least 1Gbit/s. More and more members have even updated to speeds of 10Gbit/s. A decrease in the number of routers has turn out into an increase in the duplication of Funet connections; several members are at least planning duplication.

It is noteworthy that an increasing number of 10Gbit/s ports are available to end users. The results of last year's survey show that all respondents had less than ten 10Gbit/s ports to offer to end users. Network infrastructures have been updated during the year: the number of 10Gbit/s ports has increased, making speeds of 10Gbit/s available to a larger number of users. This trend is likely to continue.

Appendices

[1]: EARNEST Report on Campus Issues, Jan 2008,
www.terena.org/publications/files/EARNEST-Technical-Report.pdf

[2]:Webropol: http://www.webrobol.com