Janet streaming servers

Usage statistics report

Contents

Introduction

The Jisc Streaming Servers have been running since May 2012. The launch of these servers has helped the student television and radio stations to broadcast their content, enabling them to easily and freely stream over the Internet, lowering the costs that would have been required of the stations.

Initially, these servers were made available for use by the 44 student TV stations affiliated with NaSTA (the National Student Television Association). Alongside NaSTA, the servers were used by the Royal Shakespeare Company, in collaboration with Ravensbourne, to bring live performances of various productions to schools nationwide frequently over the past 3 years.

Radio stations were then invited to also make use of the servers. Trials began towards the end of 2014 for select members of the SRA (Student Radio Association). The trials were successful, so access to the servers has since been made available to all 70 SRA members.

The streaming servers are available for use by student stations for regularly scheduled broadcasts as well as one-off events (e.g. FreshersTV, NaSTAVision, sporting events, and election coverage).

Monthly usage

Number of unique visitors

The graph below (Figure 1) shows how the number of viewers varied each month since the servers were launched in 2012.

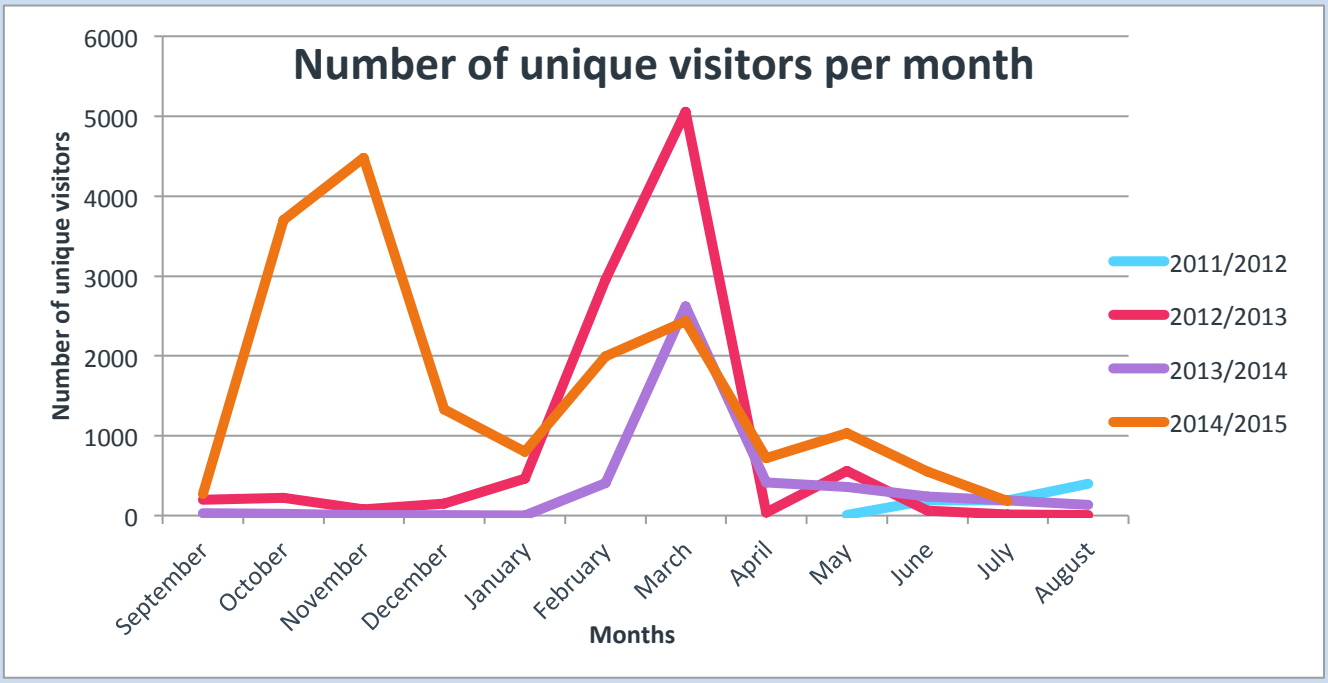

Figure 1: Graph of the number of unique visitors each month

The graph shows that each year, from January to March there is a steady increase in unique viewers, reaching a peak in March. The peak in March is likely due to the fact that the student elections usually take place around that time of the year, and an event, such as the elections, will generate interest and a large viewership.

Overall, March 2013 was the month that had the highest total number of unique visitors. This could be because it was the first year the servers were available for use, in combination with the elections providing a large event audience. Three stations (Warwick TV, NSTV, and UPSU TV) each reached over 1,000 unique viewers in this month.

After this peak, the number of unique visitors settled back to a more consistent level (generally around 200-400 visitors) as some stations choose to only use these servers when they are expecting a very large audience (such as during election times).

The huge spike in October and November 2014 was due to the Student Radio Association (SRA) stations joining and trialling the servers (Forge Radio and Purple Radio each had over 900 unique listeners in October).

So far this year, nearly every month has had a record number of unique visitors watching or listening to the streams. Since the SRA stations began using the servers last year, more station accounts have been

created and these new stations have helped October, November, December, April, May, and June see greater usage than traditionally associated with these quieter months.

Bandwidth

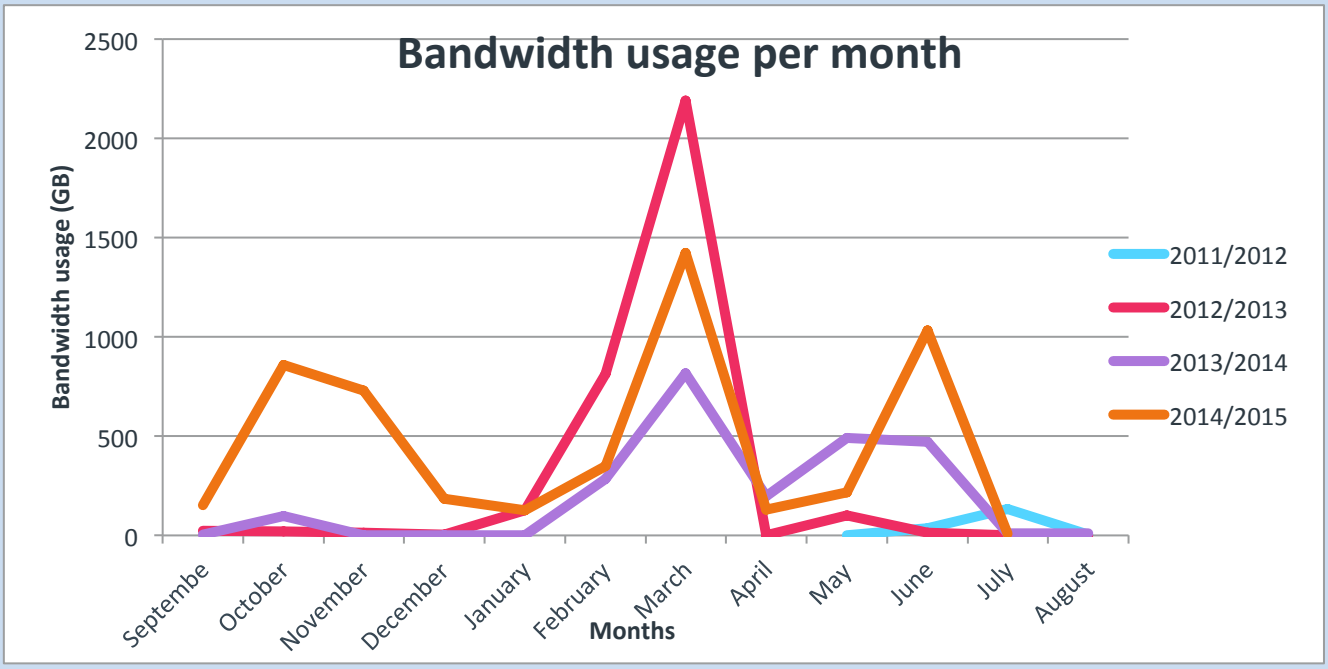

Figure 2: Graph of the amount of bandwidth (GB) used each month

Figure 2 shows how much bandwidth was used in total each month. Comparing Figure 2 with Figure 1 they mostly follow a similar shape; peaks in March every year, as well as October and November 2014, and most years have a slight drop over the summer period as expected.

Some comparisons to highlight, however, include the fact that May and June 2014 had a significantly high amount of bandwidth used, especially when compared to the relatively lower viewership seen in this period in Figure 1. This suggests that while there were not as many people viewing the streams over these months, the content required a higher bandwidth. This matches up with the fact that the Royal Shakespeare Company streamed a performance at this time. The performances were streamed to approximately 100-150 schools, and were watched for several hours (each school was allowed up to 3 terminals, enabling a potential of 300 – 450 unique visitors (for example during one of the performances each of the 3 servers had 139 to 140 connections, leading to a total of 419 connections)). The performances being streamed and watched by the schools for a long time means that the total bandwidth required for each endpoint increases. This also explains the large bandwidth spike in June 2015, as there was another bandwidth intensive stream from Ravensbourne (as they were broadcasting their degree show over 3 days).

Studying the month of March also reveals differences between the bandwidth used and the size of the audience. Figure 1 shows that March 2013 had the highest number of viewers (5,059), followed by 2014 (2,622) and 2015 (2,431), each with relatively similar audience sizes. Contrary to this, Figure 2 shows that March 2015 had a considerably higher amount of bandwidth used than 2014 (nearly double, 1,423GB compared to 816GB). One possible explanation could be if there was an increase in stations streaming in HD rather than SD.

The final interesting point of comparison between Figures 1 and 2 comes from contrasting the months of November 2014 against March 2013. In Figure 1, the number of unique visitors over these months was similar, and very high at around 4,500 – 5,000. However, looking at the amount of bandwidth used, it appears that the streams over November 2014 were less bandwidth intensive (as broadcasts in November 2014 required only a third the bandwidth necessary for March 2013 – 731GB compared to 2,190GB). The reason for this difference is likely due to the difference between audio and video streams. The SRA stations were still launching their stations on the servers, and therefore were able to generate interest from their audience, leading to a large number of visitors during this time. They were able to gain more listeners during November 2014, but required less bandwidth to stream, as their audio only broadcasts are less bandwidth intensive than the video counterpart.

Cumulative usage

Number of unique visitors

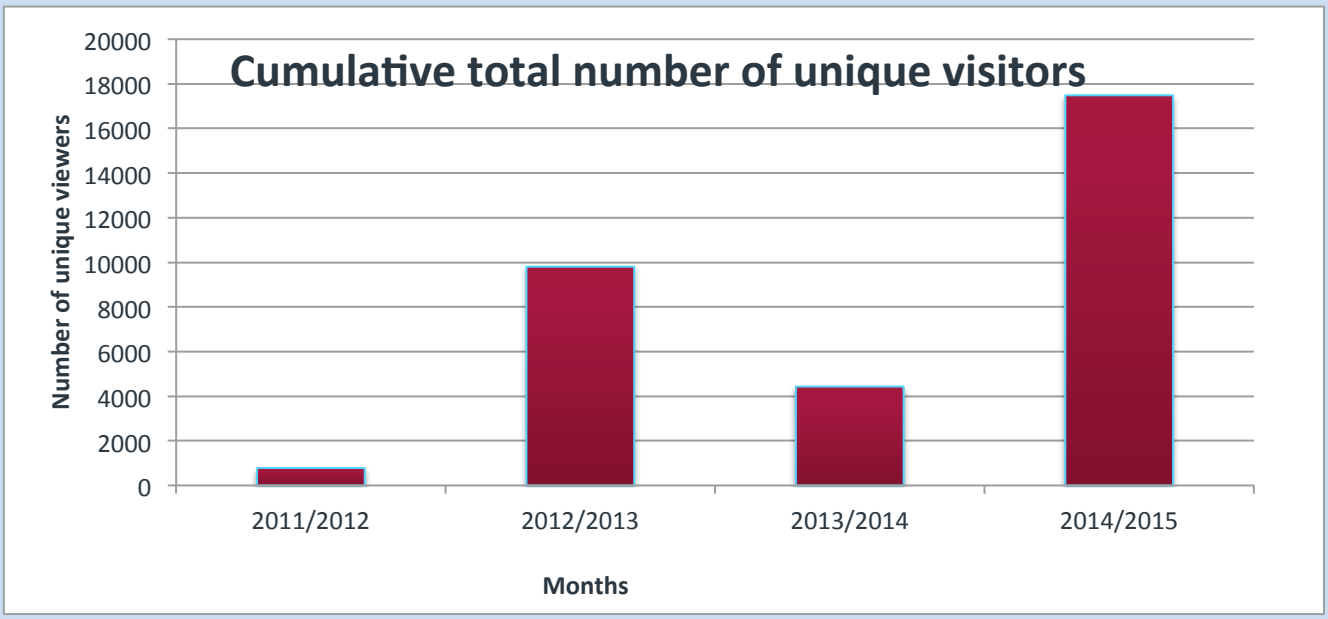

Figure 3: The cumulative total number of viewers

Figure 3 shows the cumulative total number of viewers over the course of each year. It shows that so far this year (2014/2015) has had a higher viewership than any previous year. Currently, the total number of unique viewers for this year is 17,485. The previous highest number of unique visitors was 2012/2013, which had in total 9,804 viewers. By the end of last year there had been 4,431 unique viewers. Compared to last year, this already represents an increase of 13,054 viewers, or 295%. Compared to 2012/2013 there has been an increase of 7,681, or 78%.

Bandwidth

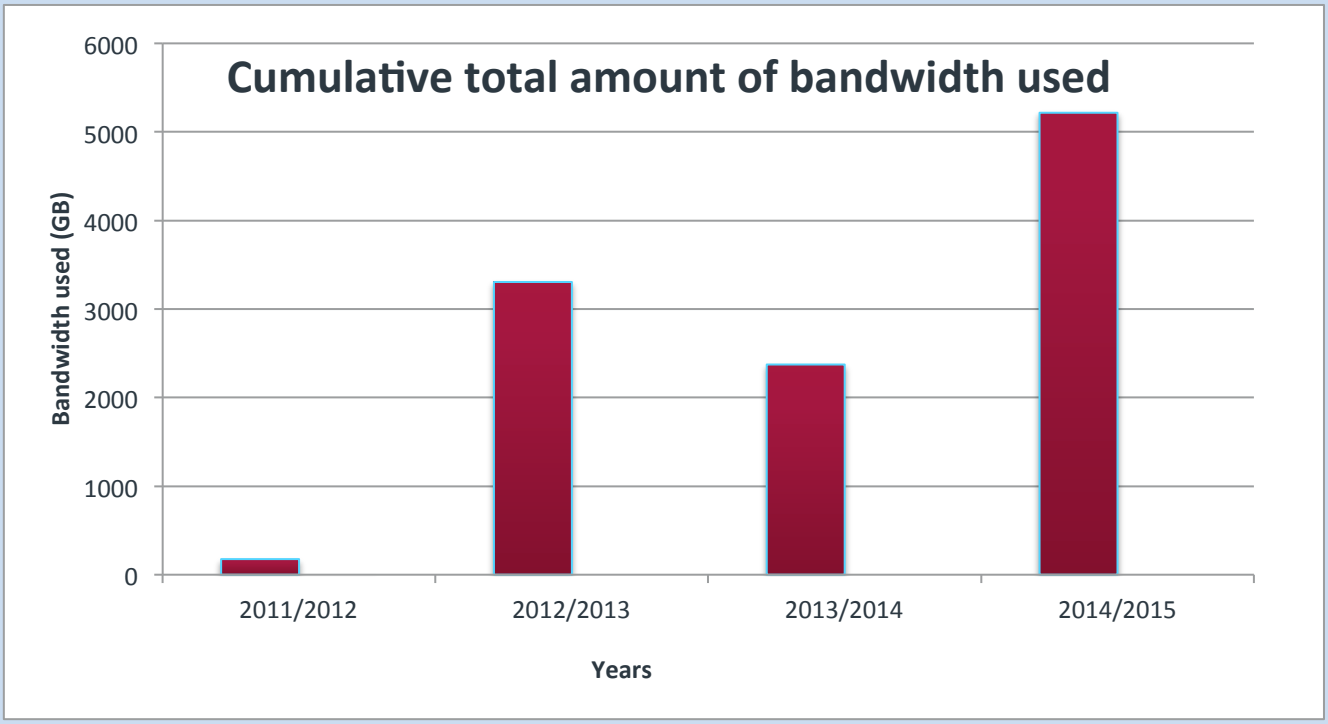

Figure 4: The cumulative total amount of bandwidth used (GB)

The graph in Figure 4 shows the cumulative total amount of bandwidth used by the servers throughout each year. Similar to Figure 3, it shows that this year (2015) is displaying increased usage when compared to the previous years.

Comparing the amount of bandwidth used, so far this year there has been 5,216GB used. The previous highest amount of bandwidth used throughout the year was in 2012/2013, with 3,305 GB used. Last year 2,373 GB was used. Compared to last year, there has been an increase of 2,843 GB, or 120%. Compared to the previous highest bandwidth usage there has been an increase of 1,911 GB, or 58%.

Number of stations using the servers

The table below shows how many stations used the servers each year.

Year	2011/2012	2012/2013	2013/2014	2014/2015
Number of stations	3	18	22	31

This table shows that each year the servers have been running, the number of stations that are using the servers has increased. So far, less than halfway through 2015, we have already exceeded the amount of stations that used the servers in 2014, and have increased the number of stations by 41%.

Most popular stations

Studying the server data, the most popular student television stations over all the years that the servers have run are NSTV (formerly NUTS, University of Nottingham) followed by LSTV (Leeds University).

The most popular radio stations are Purple Radio (Durham University) followed by Forge Radio (University of Sheffield).

User feedback

Stations using the streaming servers have described them as:

"High quality, reliable streaming with no limits and usage statistics and all for free".

"The streaming services are great for us to stream to our web player and make outside broadcasts much easier and of a much higher quality".

"Streaming via Janet has been fantastic and we look forward to continuing to do so. It really helped reduce the amount of cost and technology we needed to employ to get our webcam stream online. We'd tried many free alternatives to no avail".

Marketing impact

There are certain points in the timeline of the servers where a larger focus was placed on marketing the servers, either to stations directly, or through links with NaSTA or the SRA.

One clear example of this was September 2014. The SRA, and their associated stations, were invited to sign up and join in with making use of the servers. This led to the huge peak of usage in October and November 2014, with 2 radio stations contributing 50% of all the unique visitors to the servers for both

of those months. This demonstrates that the marketing of the servers can lead to a substantial increase in usage.

Between January and February 2015 another wave of accounts was sent out, following another email inviting interested radio stations to join up. The result of this can mainly be seen over April, May and June (after allowing time for the new stations to get set up with their equipment), and the new stations helped lead these traditionally very quiet months to seeing more use than in any previous year.

Conclusion

Overall, the usage of the servers is increasing, with this year so far seeing the number of unique visitors increase by over 78% compared to the previous highest. Alongside this, the bandwidth used so far this year is 58% higher than the previous largest amount.

The addition of radio stations has had a major impact on the use of the servers. There has been a sharp increase in the number of unique visitors using the servers to listen to shows, while requiring a comparatively low increase in bandwidth.

The number of stations making use of the servers has increased every year. In total, over the 4 years, the number of stations using the servers has increased from 3 to 31.

It is clear that usage each month varies hugely depending on whether that month is in term time or over a holiday, and especially if there is a major event occurring. For example, March is election time so always has a large event occurring, resulting in a large number of people watching the stations over our servers; while July and August are over the summer holidays so consistently have a very low audience.