Sustainable investment in Janet and its access connectivity

Jisc is constantly investing in the Janet backbone and regional access connectivity. We do this in a sustainable way, looking to deploy new and robust design approaches to maximise performance whilst remaining cost effective. This constant investment has made Janet a highly available and secure network with connectivity at a capacity and performance that continues to meet the needs of UK research and education.

It is common practice in the industry to levy a financial penalty (bursting fees) and to cap utilisation (by applying hard limits). But not on Janet. We provision at need with predictable costs and without such constraints.

As a result of continued investment, through central funding, member subscriptions and surplus from our catalogue of additional services, we continue to improve the Janet backbone and our access connectivity.

Target Availability

Target availability figures are commonplace amongst telecoms companies who often offer a Service Level Agreement (SLA). These headline figures can be somewhat arbitrary and are often set artificially high, with Service Credits used to mitigate failures of service availability. Typically, customers are compensated through small financial discounts or by way of credits against future purchases.

As a member owned organisation Jisc does not have Service Level Agreements with our members and customers. Instead, we make a Service Level Commitment. The Janet backbone is fully resilient and Jisc aims for 100% availability for IP Connections to Janet. Our performance tracking indicates that average availability, across all our members and customer’s connections, has been sustained above 99.91%* for over 12 years. The likelihood of 1 fault every 3 years. Even better, since January 2017 our availability has been sustained above 99.96%*.

However, service availability is just part of the picture and what is equally important is the time taken to return your connection to full service after an outage. In the past we have committed to a 10-hour return to service target, but again following continued investment we are now able to commit to a return to service time of 8-hours, or less, across all connection types. In fact, since 2016 our mean time to restore service has been 5 h 55 minutes*.
Janet IP Connections - Service Level Commitment and Return to Service Times

We offer a service level commitment for each type of connectivity. In practical terms for our Janet IP single and resilient connections the following service level can be expected:

- **For Resilient Janet IP Connections** our Service Level Commitment is 99.9%*, which equates to 8h 46m downtime in a year.
  - However, our analysis suggests that on average across all members and customers resilient connections the availability over the last 12 months is 99.995% which equates to 24 minutes downtime.
  - We commit to an 8-hour time to resolution and our actual mean time to resolution on resilient services is 6h 31m.
  - The likelihood of experiencing a fault is 1 every 11 years for each service**†.

- **For Single Janet IP Connections** our Service Level Commitment is 99.7%*, which equates to 1d 2h 17m downtime in a year.
  - However, our analysis suggests that on average across all members and customers with single connections the availability over the last 12 months is 99.98% which equals to 2h 8m downtime.
  - We commit to an 8-hour time to resolution and our actual mean time to resolution on single services is 5h 53m.
  - The likelihood of experiencing a fault is 1 every 2.5 years for each service*

Rather than just take our word, Jisc are proud to provide regular performance data for both the Janet network and for individual member and customer connections. Organisations can obtain their individual performance statistics via their Account Manager.

* Figures captured August 2021 and relate to a rolling 12-month period for availability figures and a rolling 5-year period for a mean time to resolution (MTTR) figures.

The MTTR, compared to our last statement November 2019, has increased. This is due to the overall number of faults being reduced, as simple faults are engineered out of our solutions, leaving the remaining more complex faults which do typically take longer to resolve. So whereas the MTTR of a fault has increased a little the likelihood of having a fault has greatly reduced. Also noting that as the number of connections has increased so too will the number of faults and this also impacts the MTTR.

† Mean time to restore a resilient connection is greater than that to restore a single connection. Odd though this seems, it is because when a resilient connection fails in its entirety, it is likely due to a catastrophic failure, e.g., widescale flooding impacting regional infrastructure. So as recovery is complex, the mean time to restore the resilient service is increased overall.