



The Janet Network during COVID-19

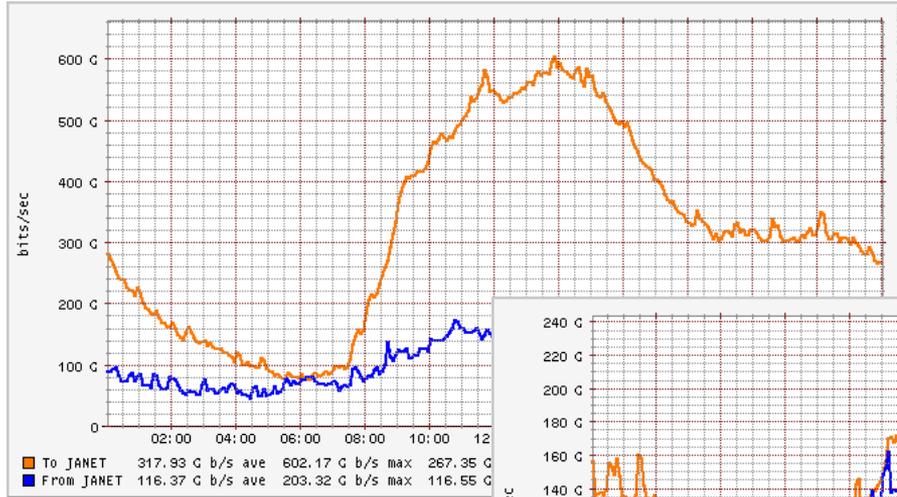
Rob Evans, Chief network architect

What is Janet?

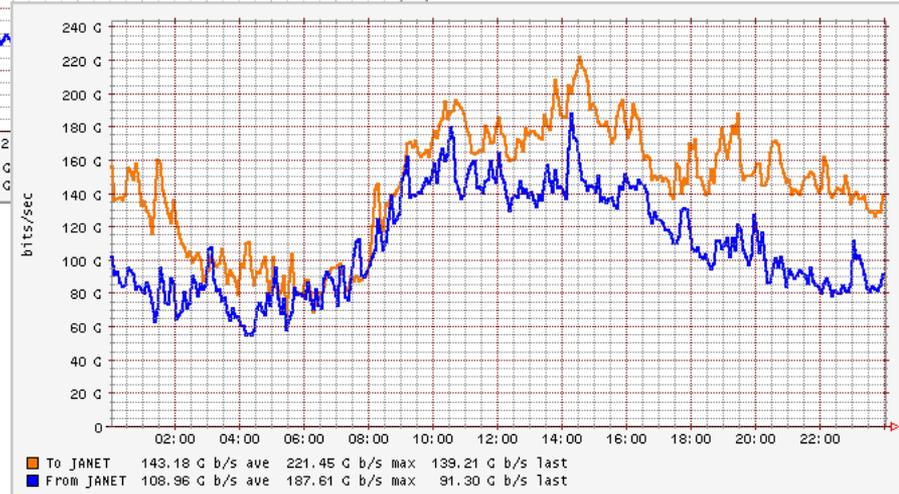
- National Research and Education Network (NREN) for the UK
- Connects Higher and Further Education Institutions
- 'Big Science' facilities
 - Diamond Light Source
 - Jodrell Bank Observatory
 - Data from the Large Hadron Collider to Tier 1 (Rutherford Appleton Laboratories) and Tier 2 sites in the UK.
- Traffic is a mixture of eyeballs (lots of outsourced applications for mail and learning environments) and data transfers



Traffic on Janet's external border



Monday 9th March



Monday 23rd March

Jisc What happened?



Fewer people on campus



Some services still hosted on-campus



Many services hosted 'in the cloud'

Just another service provider / datacentre that we need to peer with



VPNs

Default via the campus

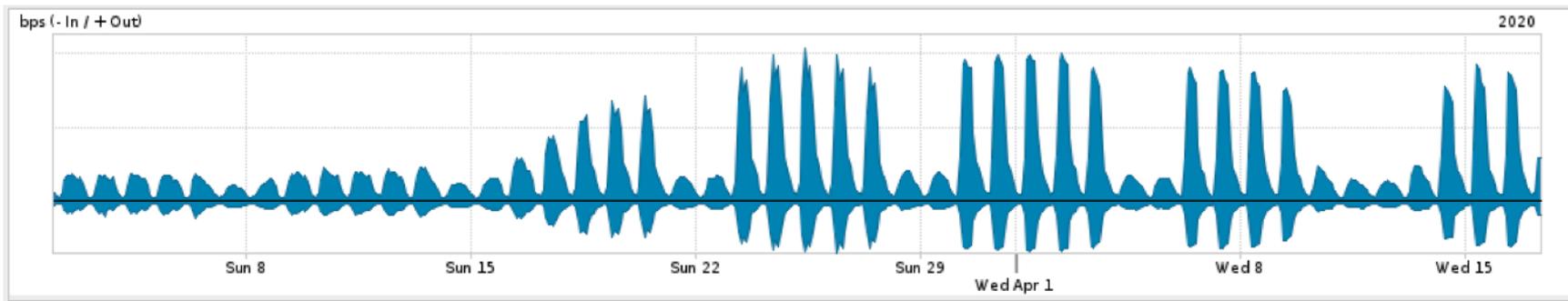
Split VPN

- Legacy services that authenticate based on IP address

Jisc What have we had to do?

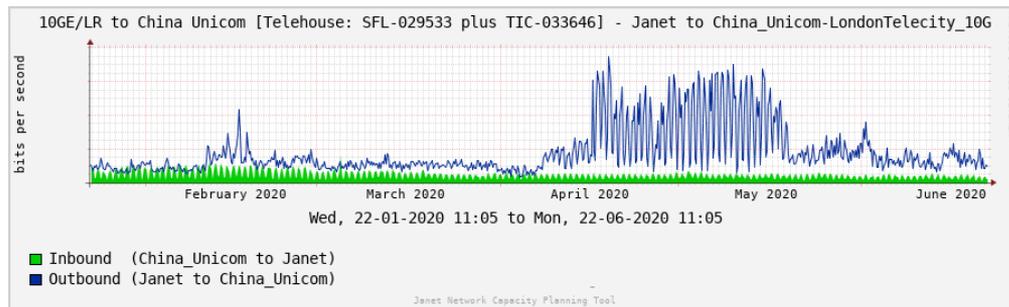
- Overall traffic levels less than usual, so not much.
- Except...
- Peerings with BT and Virgin Media were peaking at ~50%
 - Had been surprisingly static for some time.
 - Started approaching capacity after lockdown was introduced.
 - Outbound traffic to each increased by 4x
- Whilst waiting to increase capacity, manual move of outbound traffic from private peerings to LINX
 - 2x100GE, reasonable spare capacity
 - Very manual, not something we wanted to keep for the long term
- Increased one 10G – 30G – 130G.
 - Other increased to 30G.

Jisc Traffic to domestic service providers



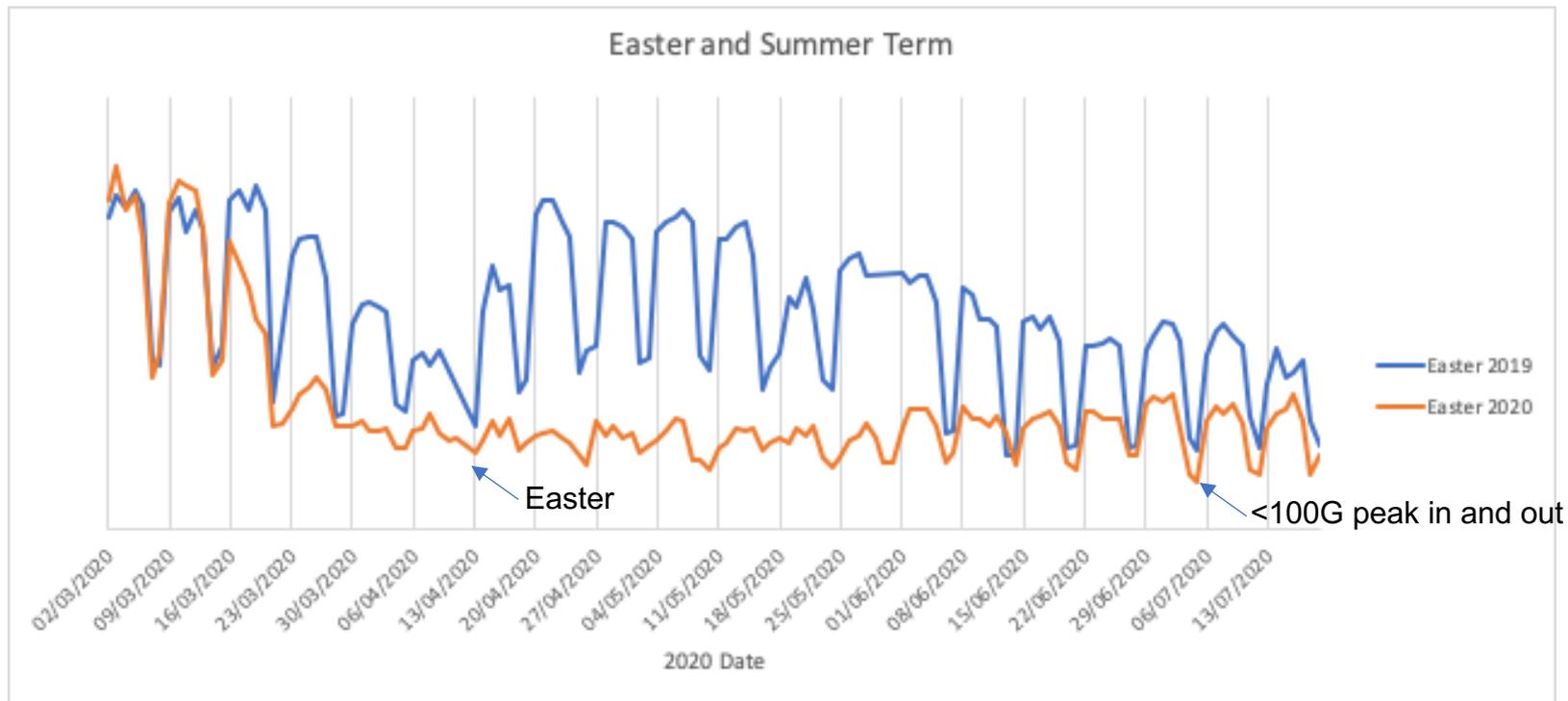
Jisc What have we had to do?

- Existing partial transit from China Telecom and China Unicom.
- Lots of students unable to return to the UK.
- Stuck behind the GFW.
- “Quick fix” solution with Alibaba to permit direct VLE access.
- Going out to procurement for a longer-term fix.
- Global NREN Working Group on “offshore student access.”

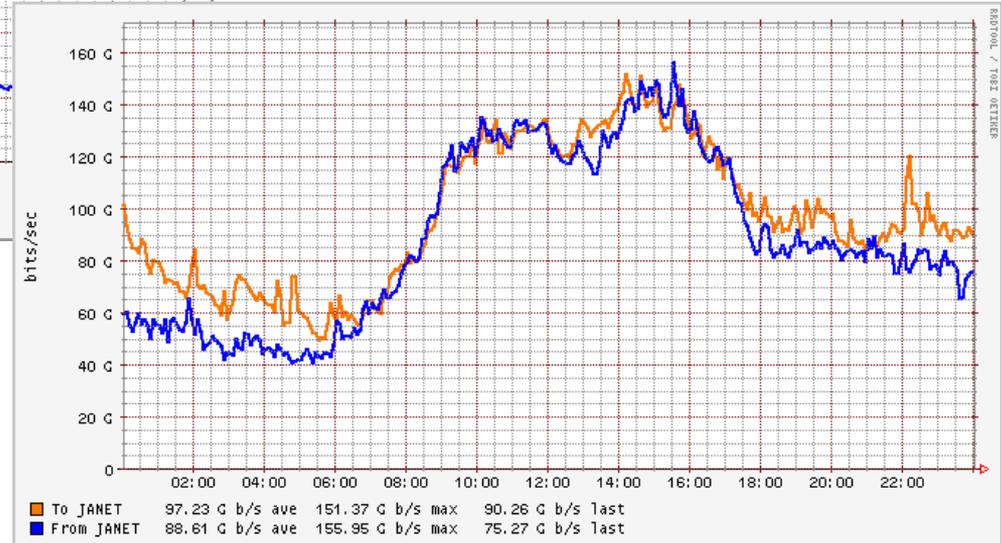
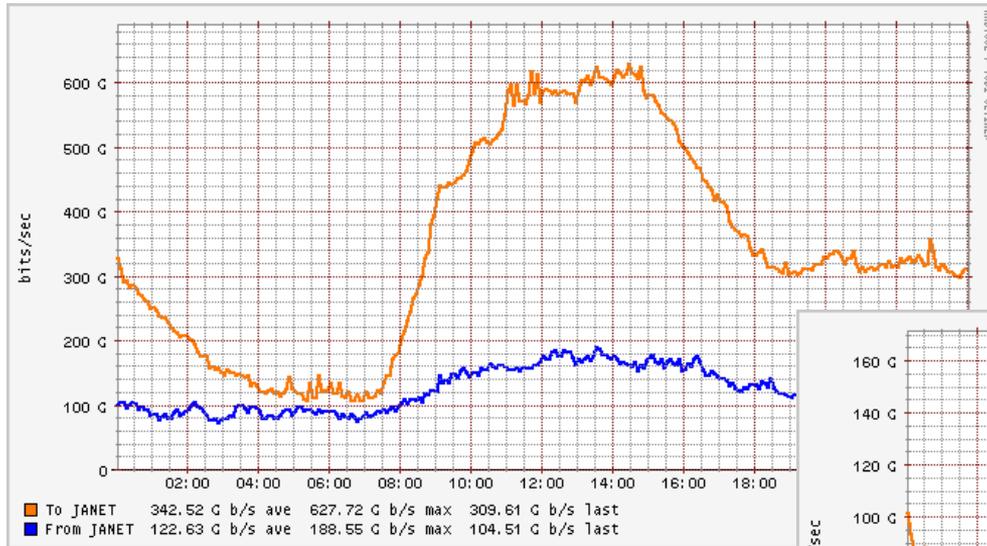


Easter 2019 v Easter 2020

*Note this graph has been fixed since the presentation due to an error pointed out by Peter Hicks!



Jisc Symmetry: 3rd Feb v 11th May



Jisc Planning and paperwork

- NOC pretty much already geared up for working from home.
- “Key worker status.”
 - Prove our engineers were allowed to be out and about.
- Delays to the “Janet Access Programme”
 - Rebuilding all the regional aggregation networks.
- No problems fixing faults.
- Access to equipment stores
 - Offices and rented storage locations.
- Advice
 - Use of masks, handwashing, social distancing.



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Private and Confidential

25 March 2020

Dear [REDACTED]

COVID-19 – Key worker status

As you'll be aware the current Government advice on COVID-19 is quickly evolving.

On 18 March 2020, the Prime Minister announced that all public schools would be closed from 20 March 2020 until further notice for all children except those of key workers. On 23 March 2020, the Prime Minister made a subsequent announcement instructing people to stay at home except for very limited purposes, one of which is "travelling to and from work, but only where this absolutely cannot be done from home".

I am writing to confirm that Jisc has identified you to be a 'key worker' due to the nature of your work.

For the purposes of your role you may also need to travel, as necessary, to support critical business operations. This travel may be to Jisc offices, customer premises, network nodes or data centres in order to carry out essential maintenance or to fix problems.

If you have any questions or concerns regarding the above, please do not hesitate to speak to your line manager or contact the People services team at peopleservices@jisc.ac.uk.

Please note that 'key worker' status in no way affects your terms and conditions of employment.

Yours sincerely,

[REDACTED]

Group director for people

Datacentre Access

- DC provider #1
 - Pretty much the same as before, with social distancing.
- DC provider #2
 - Permanent access list revoked.
 - Skeleton staff working on access requests.
 - Temperature taken on arrival.
 - Mandatory masks.
- Hour plus waits for entry.

What else have we considered?

- National VPN service
 - eduVPN perhaps?
 - Currently on hold, most members scaled up their VPNs quickly.
- Assistance for students with poor connectivity.
 - Zero-rating mobile data?
 - Advice for better home networking.

Where next?

- Where will students be for the 2020-2021 academic year?
- What does this do to our capacity planning?



Questions?