Janet End-to-End Performance Initiative (e2epi)   *v1.0, 17th June 2015*

Janet is a state-of-the-art national research and education network infrastructure, connecting millions of users who use a wide range of applications and services.

There is an increasing desire within Janet's education and research communities to use more demanding networking applications, such as real-time media or data streaming, low latency haptic applications, or bulk transfers of research data in the order of Terabytes or more. Further, with increasing use of outsourced services and remote data centres, where the applications live outside the home institution, network performance is key.

Recognising this, Jisc is launching its end-to-end performance initiative (e2epi) to support communities in making optimal use of the Janet network.

While some high performance networking requirements have been met through the Janet Lightpath service, Jisc also wishes to encourage communities to use the Janet IP network for such applications.

The Janet end-to-end performance initiative aims to:

- Identify existing and emerging communities that are running or seeking to run more demanding network applications on (and beyond) Janet;

- Seek out communities that are unaware the network is an option for their large-scale data transfers;

- Establish and share best practices in high performance networking with and between Janet's user communities, computing service departments and academic network researchers;

- In doing so, raise awareness of the issues and factors affecting end-to-end network performance, including application behaviour, end system tuning, network protocols, local site network architectures, and the Janet infrastructure;

- Work with all interested parties to raise the 'high water mark' for network-intensive applications, in so doing promoting awareness of what is possible on the Janet infrastructure;

- At the same time to ensure that community expectations are realistic, providing the tools, information and assistance required to allow users to determine and manage those expectations;

- Offer specialist assistance to communities seeking to obtain better network performance for applications, either before a specific project starts or while a project is running;

- Establish and promote the use of appropriate Jisc-supported network monitoring tools to assist in the visualisation and, where necessary, troubleshooting of application performance across the Janet network;

- Consult with projects and communities, provide online resources, run mail list(s), and host workshops and meetings to support all the above.

Jisc recognises that there are a number of established communities with high-performance network requirements, which are already running such applications and achieving good results. The Janet e2epi will look to build on this experience, and share best practices from it, with the goal of improving network performance for a wide range of applications.

We encourage all interested parties to engage with the initiative by:

- Contacting Jisc to discuss your specific high performance networking requirements, or for advice on any performance issues you are experiencing;

- Sharing your success stories with Jisc, so that we can document, share and promote them to other Janet communities;

- Joining the Janet e2epi mail list, *e2epi@jiscmail.ac.uk[1]*, where open discussion is encouraged on all aspects of network performance;

- Joining the Janet e2epi Jisc Community group[2], where we are building resources, advice and material on various aspects of network performance;

- Attending future e2epi workshop meetings, the first of which is scheduled for September/October 2015, date and venue TBC.

The initiative is open to contributions from all of Janet's research communities, its connected site network operators, and network research academics. We also welcome input from communities beyond Janet.

Further information can be found on the Jisc web site at:
http://www.jisc.ac.uk/rd/projects/end-to-end-performance

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[1] https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=E2EPI
[2] https://community.jisc.ac.uk/groups/janet-end-end-performance-initiative