

**School of Computing Science Ethics Committee  
University of Glasgow**

**Request for Ethical Approval**

This form is to be used by 3<sup>rd</sup> year, 4<sup>th</sup> year, MSci, MRes, and taught MSc students in the Department of Computing Science whose projects entail human participation and which do not conform to any one of the criteria on the project ethics checklist form (<http://www.dcs.gla.ac.uk/ethics/projects-form.pdf>). Students enrolled for an MSc by Research or a PhD, and members of academic or research staff should submit their request for ethics approval to the Faculty Ethics Committee (see <http://ethics.ims.gla.ac.uk/>)

The form should be completed and returned by email to Prof Stephen Brewster ([stephen@dcg.gla.ac.uk](mailto:stephen@dcg.gla.ac.uk)) to whom all enquires or requests for advice should be directed.

All sections of this form must be completed.

Before completing this form, please read the British Psychological Society's Code of Conduct (available on <http://www.dcs.gla.ac.uk/ethics/>). The relevant sections of the code are noted against questions in this form.

Copies of the participant information form and consent form should be submitted together with this form (BPS § 3&6).

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Student's name: Myles Lamb

Registration/Matriculation Number: 2325727L

Email address: 2325727l@student.gla.ac.uk

Year level (3<sup>rd</sup>, 4<sup>th</sup>, MSci, MRes, MSc): 4<sup>th</sup>

Supervisor: Dr Colin Perkins

Project title: Where is ECN stripped on the network?

1. Describe the basic purposes of the proposed research:

To measure the adoption of a feature contained within computer network traffic, known as Explicit congestion notification (ECN). Which allows for devices on the network to signal impending congestion. Furthermore we investigate if and where, devices within the network modify the expression of these features within transmitted traffic, that may impair the feature's operation.

2. Describe the design of your experiment (e.g. conditions, number of participants, procedure, equipment) (BPS §2&8):

Number of participants:  
~10

Conditions:  
Participants home / residential network.

Procedure:  
Participants will install an open source network traffic analyser written by myself on their own computing equipment, and will be supplied (electronically) with an appropriate dataset. The network traffic analyzer executes the dataset by performing interactions with the wider network (the internet) with respect to the goals of the research (measuring interactions of ECN on the network). The tool will run the dataset once, daily for a time period of two weeks.

After the initial setup, the tool requires no intervention from the participant until the end of the specified time period, only routine checkups may occur at a frequency of at most once per day. At the end of the experimental period participants will be asked to provide the outputs of the tool. A collection of \*.pcap files. containing the observed network traffic originating from the tool. And a collection of \*.key files containing cryptographic keys for protocols that operate using TLS.

Equipment: Participants own computing equipment, which would conform to Standard desktop PCs.

3. Describe how the procedures affect the participants

Participants will be asked to run a produced network analysis tool from their home network for a prolonged period of time as described in "2". Once the tool has been initialised, no further involvement from participants will be required until retrieval of the outputs of the tool.

4. State what in your opinion are the ethical issues involved in the proposal (BPS all sections)

A fundamental aspect of the tools operation is the collection of network traffic, stored in \*.pcap files, consequentially this records the participants local IP address, MAC address of local network devices, and server reflexive address. Which could be used to identify participants.

However, this is a relatively minor aspect of the tools produced data. Most of the the output is of IP addresses of infrastructure nodes within the core of the network. Furthermore, the network traffic that is recorded is test traffic generated by the tool, not from the participants routine use of their computing equipment

5. Specify whether the research will involve children, or those with a physical or mental disability (BPS §3):

No

If so, explain the steps taken to obtain permission from LEAs, head teachers, parents etc:

N/a

6. State if payment will be made to subjects:

No

7. Describe procedures for obtaining consent from participants (BPS §3):

I will organise a voice call over an applicable medium, giving the opportunity, to evaluate the items within the introductory script, seeking explicit verbal consent from the participant.

Additionally Participants will be provided with and required to return a completed consent form prior to obtaining any further direction with respect to the proposed methodology in "2". The consent form will be provided alongside a participant information form.

8. State whether the proposal is in accord with the BPS code of conduct:

Yes

9. Describe how the participants' anonymity and confidentiality will be maintained (BPS §7):

Given the ethical issues raised in 4, upon retrieval of raw data from participants. Efforts will be made to store data securely. Utilising file encryption through the tool "gpg".

Once the research has completed, efforts will be made to destroy all of the source data from participants. It may be noted, that the research does not concern itself with participant's personal data directly and subsequently my dissertation would not be published containing any of the participant's personal data.

10. Date on which the project will begin:

11-01-2021

11. Location at which the project will be carried out:

Various, dependant on participants location

12. Describe how participants will be debriefed at the end of the experiment. This must include the opportunity to contact the experimenter (or supervisor) for feedback on the general outcome of the experiment. (BPS §5&10)

Upon completion of the time period, I will organise a voice call over an applicable medium, giving the opportunity for the participant to be informed again of the aims of the experiment, the data that was collected. Furthermore this presents an opportunity for the participant to ask any questions, and highlight any negative experiences over the research period. Lastly, the participant will be informed of the contact details of myself, and Dr Colin Perkins.


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Student's Name Myles Lamb

Student's Signature 

Date 4/12/20

Supervisor's Name Colin Perkins

Supervisor's Signature 

Date 10 December 2020

SOCS Ethics Committee Signature 

Date 11th December 2020