



## OpenNICTA Open Source Software Information and Video Transcript

**Software name:** Freeze-TCP module for ns-2

**Software description:** Freeze-TCP is a mechanism to mitigate the effect of mobility on TCP connections. The basic idea is to "freeze" the TCP senders' streams little before a disconnection is to occur. The piece of software made available here is a module for the ns-2 network simulator to add support for Freeze-TCP.

**Project description:** This ns-2 module was initially developed by NICTA PhD Student Adeel Baig, and further improved by Olivier Mehani, who is part of the [Ambient Networks Project](#).

**Link to Software:** <http://nicta.com.au/people/mehanio/nsfreezetcp>

---

### Video Transcript

#### Interview with Olivier Mehani

##### Tell us about yourself and the research you are currently working on

**Olivier:** I am a PhD Student, or what you would call a NICTA-enhanced PhD Student, but I am also on a co-tutelle with the École des Mines. in France. Basically I am working on network and mobile devices which you are putting more and more in your pockets. The idea is that there is still much work to do so that the connection between these devices is done seamlessly, so this is more broadly the topic of my research.

##### Tell us about your open source software

**Olivier:** One of the characteristics of such mobile devices is that they keep hopping from one network to the other, and while they are hopping basically they do not have connectivity so they cannot communicate anymore. There has been this proposal in 2000 which is Freeze TCP and the idea was just to – well as the name says – just freeze the transmission protocol so that the device can safely hop without losing any data. Basically there has been some research made at NICTA by Adeel Baig in 2006 I think, who actually wrote simulated implementation of the Freeze TCP for ns-2 which is a network simulator and he did it for his own research. For my research it turned out that I needed that as well, so what I did was ask Adeel to give me his code and I worked a bit on it, improved it and packaged it in an easy way to re-use and distribute.

##### Why open source?

**Olivier:** In this specific case it was quite obvious because basically I didn't have the source and it was given to me, and then I did a bit of work on that and I was just like well I can keep that work for myself, but there's no real way to actually make money out of it. So the best way is that everybody can use it. Redistributing this open source version of this module to the entire scientific community is just a way to allow more people to work on Freeze TCP. For example, I actually received an email two days ago from somebody who wants to make some simulation with this module – that was quite pleasing! Even on a more general basis, you can either keep software and try to sell it,

or just try to build and improve together on the same piece of code - everybody can bring his own improvement to the piece of code, use it and then allow everybody else to use it as well. It is more or less the entire community which just benefits from open source I would say, like the scientific community, but maybe on a more general basis as well. I'm a fervent proponent of open source.