

DCCP Status for Linux (as of 2.6.18rc1)

Ian McDonald

ian.mcdonald@jandi.co.nz

<http://wand.net.nz/~iam4>

9th July 2006

Linux status

- Released in 2.6.14 with just CCID3 due to much hard work by Arnaldo Carvalho de Melo
- Incrementally improved each release and now includes CCID2
- No support yet for experimental features such as VoIP, faster restart

Linux status continued

- More work queued for future release
- Not yet RFC compliant
- Works but has some bugs
- If using Linux always get the latest kernel!
- Supported by mailing list (see <http://vger.kernel.org>)

Status of implementation

- Official to do list is at <http://linux-net.osdl.org/index.php/TODO#DCCP>
- Large CCID2 improvements coming (missed 2.6.18 merge window so probably 2.6.19)
- Checks need to be done on fairness against TCP as it would appear that DCCP implementation in Linux is too aggressive – most likely bugs in congestion control

Interoperability testing

- Testing done between FreeBSD and Linux
- Testing done over 18 hops between Brazil and New Zealand
 - Only issue was NAT – router/firewall had no DCCP support. Linux now has this support added if it is the firewall/NAT box
- Tested extensively using netem to vary line speeds, loss
- iperf, tcpdump, ttcp modified to support testing
- Concern has been raised that DCCP not competing fairly with TCP – not yet verified

Possible issues found with DCCP

- On high speed, low latency links have to set the sequence window above 100 which is the default in section 7.5.2 of RFC4340. If this isn't done then sends SYNC and speed reduces due to time to resync.
- Suspect that this may actually be bugs in Linux as there are other issues.
- Aggravated by the fact that altering this value in Linux didn't work!! Fix now queued for this.

Work to do

- Fix known bugs
- Audit against RFCs
- Check fairness against TCP
- Implement experimental extensions

**WAND Network Research
Group**

**Department of Computer
Science**

**The University of Waikato
Private Bag 3105
Hamilton, New Zealand**

www.crc.net.nz

www.wand.net.nz

www.waikato.ac.nz

WAND
Network Research Group



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato