VERIFICATION OF TCP-LIKE DATA TRANSPORT FUNCTIONS

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Introduction

This report contains the transcripts of a mechanical verification of the "Nano TCP protocol," which is an abstract model of the data transfer functions of the TCP protocol [Postel 80]. A description of the Nano TCP protocol, as well as complete documentation on the verification methods, can be found in a separate report [DiVito 82]. Reference to this report is necessary, since the following material is not self-contained.

There are two parts to the actual transcripts. First, there is a log of the VC reduction program [DiVito 82] run on the VCs of the sender and receiver process. The result is the production of a transformed and simplified set of VCs. Second, the transcripts of the proofs of these transformed VCs are displayed. The proofs were carried out using the Boyer-Moore theorem prover [Boyer 79].

Appendix A
VC Reduction

Appendix B
VC Proofs

References

[Boyer & Moore 79]
R. S. Boyer and J S. Moore.
A Computational Logic.
Academic Press, New York, 1979.

[DiVito 82] B. L. DiVito.
Verification of Communications Protocols and Abstract Process Models.
PhD thesis, University of Texas at Austin, 1982.
Technical Report 25, Institute for Computing Science.

[Postel 80] J. Postel, editor.
DoD Standard Transmission Control Protocol.
ACM SIGCOMM 10(4), October, 1980.

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