ROHC, RObust Header Compression, RTP/UDP/IP demo

Authors:

Aurélien Francillon, Sylvain Deswaerte, Vincent Roca
Planete team, INRIA Rhône-Alpes
email: {firstname.name}@inrialpes.fr
Pascal Moniot
Advanced Systems, ST Microelectronics
pascal.moniot@st.com

Short introduction to ROHC:

In this demo we present the ROHC implementation that has been developed jointly by INRIA and ST Microelectronics.
ROHC (RFC 3095) is an Internet standard that provides a generic way to compress Internet Protocol headers reliably over wireless links with high error rate (~10^{-3}) and high latency. ROHC is therefore particularly suited to cellular links such as UMTS (ROHC is a part of the 3GPP standard).
The usage of IP on mobiles phones is a way to achieve a better flexibility, integration and easier management of the provided services.
A problem with voice over IP applications on cellular links is the high header overhead: using RTP/UDP/IPv4 the header length amounts to a total of 40 bytes, and 60 bytes with RTP/UDP/IPv6.
Comparatively the payload size may be as low as 15-20 bytes. In such a case header compression is necessary to achieve a cost effective network usage, since ROHC may compress up to 1 byte headers.

Demonstration:

We implemented ROHC on Linux 2.4.x kernel over Wi-Fi and Ethernet networks. Our implementation supports various compressions profiles: no compression, RTP/UDP/IPv4/v6 (that will be demonstrated), UDP/IPv4/v6 , ESP/IPv4/v6 compression schemes, respectively called profile 0,1,2 and 3.
For this demo we will use *Darwin Streaming Server as video server* and *mpeg4ip* as video player on two hosts loup and lupus. A third machine Fouine is used as network sniffer.