

PtsCase10

Opera Oberta: preliminary measurements

PTS Case 10

Background

Ecole Polytechnique Fdrale de Lausanne (EPFL) wanted to receive high-quality multicast transmissions from the Liceu opera in Barcelona, as part of the "pera oberta" project. Past tests had been unsatisfactory, with packet loss and reordering. EFPL contacted the PERT to get help and advice on what they should do to improve their reception.

Investigation

The PERT duly oversaw some preliminary tests. The first transmission, to IP address 227.142.142.1, experiences some performance problems (visible artefacts), apparently due to overload of the router at the sending site in Barcelona. When the transmission was started again using a different address, 227.142.142.100, these problems disappeared. It was not clear why the choice of IP group address had an impact on performance. Subsequent testing passed off satisfactorily.

Outcome

On successful completion of the tests the PERT case was closed, and the following notes made. First, 227... addresses should not be used on the Internet, because this range of addresses has not been allocated by IANA. Some networks/sites may actually filter multicast traffic to such addresses. An interesting alternative would be "GLOP" address space. RedIRIS can assign addresses to the pera oberta project from RedIRIS' GLOP range, 233.2.254.0/24 - derived from RedIRIS' AS number 766 ($2 \times 256 + 254$). Second, it would be good to have a monitoring infrastructure in place that would allow to quickly detect degradation of performance for multicast transmissions such as pera Oberta's. Transmission quality could be measured at the endpoints, using packet trace analysis or using mechanisms integrated in the decoding programs. Also, traffic could be counted in the backbone using ACL (access control list) entries, Netflow, or other accounting mechanisms. Finally, it should be possible to get some indication of transmission quality using `mtrace`.

-- Main.TobyRodwell - 31 Jan 2007