AETA AUDIO SYSTEMS

Best practices for SIP connections

Contents

1 *Best practices*

The use of the RTP proxy has some drawbacks because it tends to increase the distance and/or the number of routers crossed on the path between the agents:

- Increased transport delay, and consequently latency.
- Possible increase in the jitter and the packet loss rate.

But also a “bigger” risk on the link in case of failure at the SIP server and its RTP proxy.

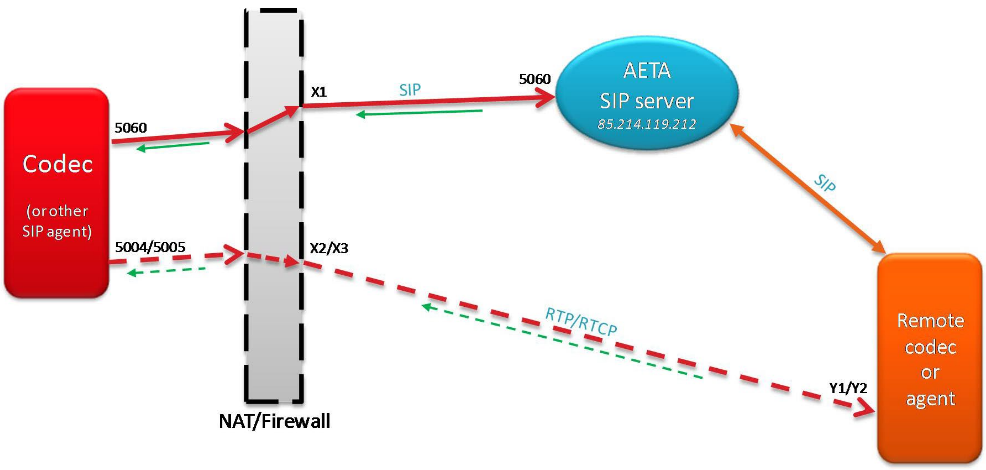
For these reasons, and for getting the most direct route possible, we recommend this two-steps approach:

1. Use STUN and try to establish the link.
2. If the network connectivity does not allow such direct connection to work correctly, disable STUN, and then the RTP helps get a successful link.

We globally recommend to keep STUN active whenever possible, especially when making permanent links

2 *Explanation of RTP flow*

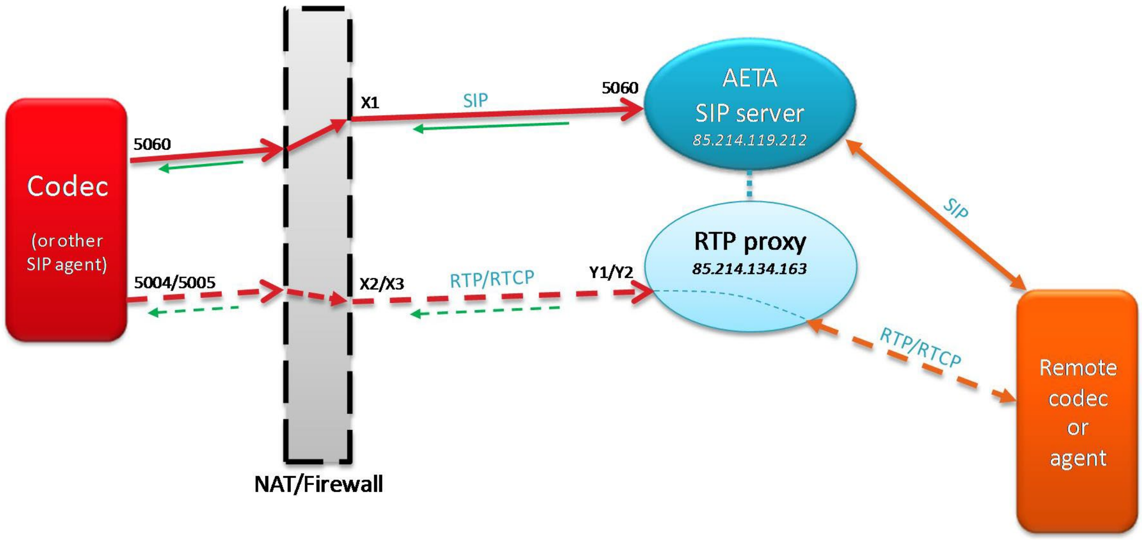
On a SIP session, the agents *a priori* try to exchange audio streams directly with each other, each agent notifying the other the IP address and port to which the audio stream (RTP protocol) should be sent. This process can be hampered when the Internet access router implements network address translation (NAT). Thanks to the use of STUN, the SIP agent can detect its public IP address and port numbers, and manage to get this direct peer to peer exchange, as shown in the diagram below.



Using STUN, direct RTP exchange between agents

However, there are situations in which this direct exchange will not work, for instance when the NAT router is of so-called "symmetric" type. Such case is often met with mobile network access.

To work around this issue, the server includes an "RTP proxy" function that can handle the routing for the RTP streams. When the server detects a network configuration that requires this, it involves in the transaction an RTP proxy which will relay the RTP streams, as shown in the diagram below.



RTP exchange relayed by the RTP proxy

It is sometimes necessary to disable STUN (at least on one of the agents) so that the server can accurately detect the context which requires involving the RTP proxy.