Signaling and Media Correlation

Qrystal uses a two-stage mechanism to correlate data on media and control plane traffic measured at different points in the network.

First stage

Qrystal Probes first apply a patented online correlation mechanism, which links signaling and media information while VoIP sessions are in progress. The mechanism is able to identify and characterize media streams in all phases of the session, such as early media (ringtones, pre-call announcements) from multiple parties and in-call codec changes. Additionally, Qrystal recognizes media streams that have been modified on the IP layer to pass through firewalls and Network Address Translators (NAT). Thanks to the online correlation, these streams are matched to the signaling sessions while the session is still in progress. All correlated xDRs and streams are available in the web interface for troubleshooting and analysis.

Second Stage

The Qrystal Manager correlates all xDRs and streams of a call to create CDRs representing an end-to-end call view. Qrystal analyzes all the streams' SSRCs, start times, and endpoint IP addresses and detects which streams and xDRs belong to the same call. All streams and xDRs of the same call receive a CDR tag, so all of them are linked to this particular CDR.
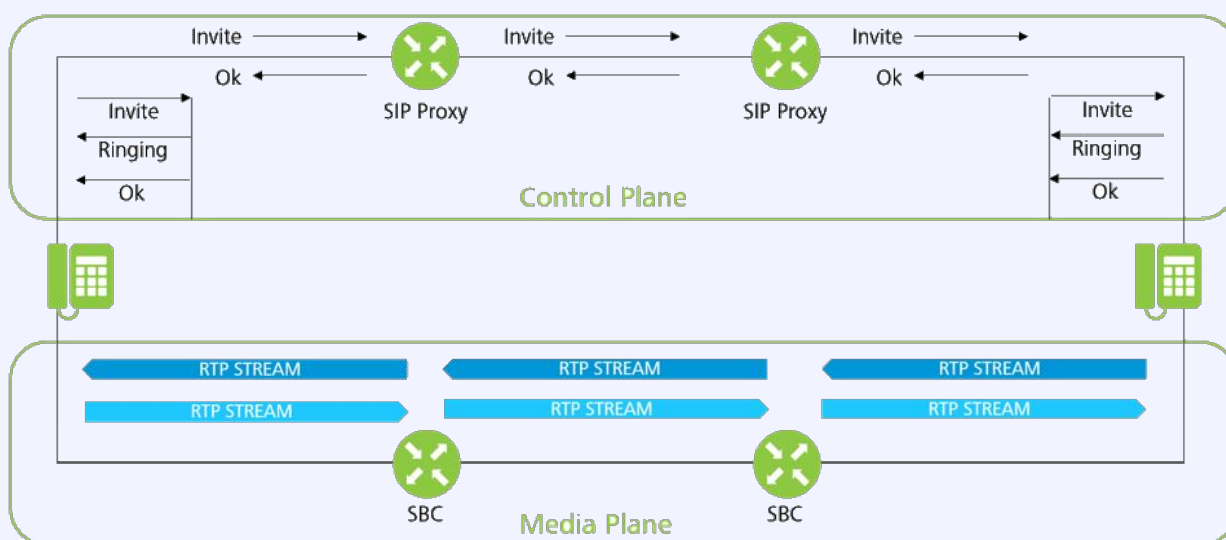
A CDR may contain more than 300 fields. A call's media quality is determined by the stream with the worst quality on the call path. If a certain metric differs from stream to stream or from xDR to xDR, then Qrystal flags this difference to support analysis.