DCON

An actual implememtation of a distributed multimedia conferencing framework compliant with the IP Multimedia Core Network Subsystem specification.

An extension to a standard centralized conferencing framework under definition inside the IETF XCON (Centralized Conferencing) working group.

DCON is built as an overlay network acting as glue among a number of centralized conferencing “islands”.

DCON is characterized by very high scalability.

IMS-enabled Distributed Conferencing Architecture

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DCON

AN IMS-ENABLED DISTRIBUTED CONFERENCING ARCHITECTURE

http://dcon.sourceforge.net
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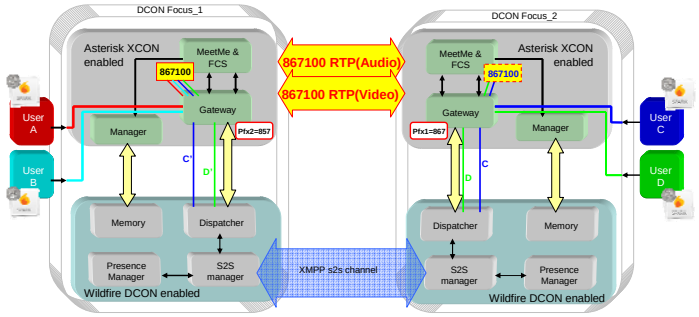
AN OPEN SOURCE DISTRIBUTED CONFERENCING FRAMEWORK

We present an IMS-compliant architecture called DCON [1], offering a distributed conferencing service with enhanced functionality, such as conference scheduling facilities and conference moderation, and characterized by very high scalability [3]. DCON has been realized by exploiting existing achievements in the field of conferencing. More precisely we started from the IETF Centralized Conferencing (XCON) framework, from which we drew inspiration. Our research group developed an open source XCON implementation which has been called CONFIANCE, standing for CONFerencing IMS-enabled Architecture for Next-generation Communication Experience [2]. Our architecture is capable to effectively support the creation and management of a distributed conference in a scenario involving a number of IMS-compliant core networks, interconnected through a communication channel created on an ad hoc basis.

DCON IMPLEMENTATION

The figure depicts the main implementation choices of the DCON architecture. On the server side, each DCON focus is conceived as an integration of an Asterisk based implementation of the XCON focus (upper box) with a brand new module specifically conceived for the SPreAding of Conference Events (which we called SPACE). SPACE is realized as a plug-in for Wildfire, a popular open source instant messaging server, and actually represents a key component of the architecture, since it enables inter-focus communication through the exchange of conference information on XMPP server-to-server (s2s) channels. Inside DCON, communication between the legacy Confiance modules and the newly created distribution components occurs on the basis of an asynchronous paradigm in which a number of events are generated by Confiance modules whenever something relevant occurs in the XCON island they currently supervise. The client side functionality, instead, is actually carried out by a dedicated software we developed starting from an open source instant messaging client for the XMPP protocol, called Spark, to which we added the support for conferencing-related protocols (BFCP – Binary Floor Control Protocol, and CCP – Conference Control Protocol) and the capability of interacting with the framework by means of SIP.



[1] A. Buono, S. Loreto, L. Miniero, and S. P. Romano – *A Distributed IMS Enabled Conferencing Architecture on Top of a Standard Centralized Conferencing Framework* – IEEE Communications Magazine, 45(3), March 2007.

[2] A. Buono, T. Castaldi, L. Miniero and S. P. Romano – *Design and implementation of an open source IMS enabled conferencing architecture* – Proceedings of the 7th International Conference on Next Generation Teletraffic and Wired/Wireless Advanced Networking (NEW2AN2007), September 2007 (to appear)

[3] A. Amirante, T. Castaldi, L. Miniero and S. P. Romano – *Improving the scalability of an IMS-compliant conferencing framework through presence and event notification* – Proceedings of IPTComm2007 (Telecommunication in the Internet age), July 2007

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