omNovia Web Conference Infrastructure Overview

The omNovia Web Conference system was originally built for the financial industry with the most stringent requirements when it comes to speed and reliability. Leveraging the latest network redundancy techniques, omNovia Web Conference provides an unprecedented level of reliability while leveraging the Internet to keep costs low.

Unlike certain other web conferencing platforms, the omNovia Web Conference does not rely on a proprietary network infrastructure. Instead it runs on the regular Internet backbone with an innovative, efficient and light-weight mechanism named **ORIGIN** (omNovia Redundant Intelligent Global Infrastructure and Network), which is the combination of:

- Flexible, distributed and redundant server farms
- Fault-tolerant load-balancing algorithms
- Compression and optimization techniques

ORIGIN is developed and maintained by highly trained engineers leading to a 99.99999 % uptime with worldwide coverage and around the clock technical support. ORIGIN enables omNovia Web Conference rooms to operate with real-time and high quality audio, video, desktop image and file sharing etc.

1) **Flexible, Distributed and Redundant servers**

omNovia Technologies has established high quality data centers in America, Europe, Australia and the Middle-East partnering with the most reputable server host companies. The servers are distributed across multiple locations in each continent to reduce any regional disconnections.

Figure 1: omNovia Worldwide Data Centers

In addition to global footprint increasing connection and transmission speed, omNovia employs a high degree of server redundancies. As an example, if an image server came to fail during a desktop sharing, another server in the same geographic location would automatically start and resume the projection in a seamless fashion.

End-users in different geographical locations can connect to regional servers to enhance connectivity and speed of data transmission. For instance, viewers in Australia would connect to servers based in Brisbane while those in the US would connect to Dallas even if they were in the same web conferencing session.

It is possible and relatively easy to add new Image or Voice servers at new locations. omNovia engineers can set up secure servers at a customer's premises if necessary.

2) **Fault-tolerant load balancing**

As part of the ORIGIN system, an elaborate **load-balancing mechanism** enables simultaneous access to omNovia rooms to thousands of participants. The omNovia intelligent Load Balancer ensures that the server burden is spread across multiple servers when tens of thousands of participants "hit" the omNovia login pages at once.

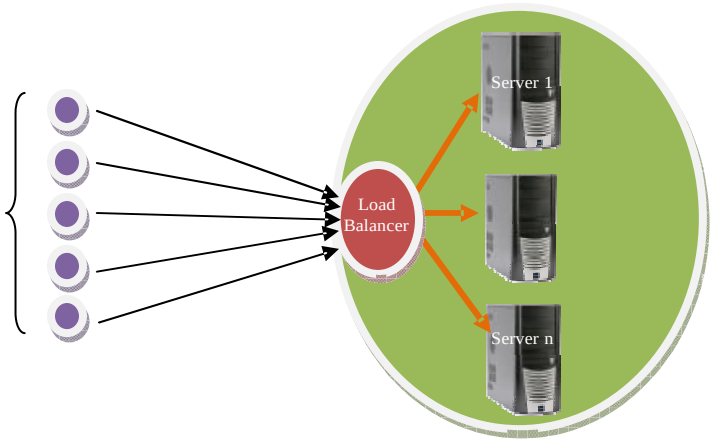

Figure 2: omNovia Advanced and dynamic load balancer

The omNovia Load Balancer also features a Fault-tolerant module that ensures reconnection and retransmission in case of data loss.

Similar systems operate on voice and image servers to guarantee real-time error correction and fluid transmission for up to 5,000 simultaneous participants in each omnovia Web Conference room.

3) **Compression and optimization**

omNovia Web Conference enables live and interactive broadcast of desktop image, video and audio that can be data-intensive. When a presenter is showing an application live from his/her desktop, the transmission of 1280 x 1050 pixels forms a 1.3 MB image file.

Transferring that amount of data every time something changes on the screen would require an unreasonable amount of network bandwidth for the presenter and viewers. A unique **omNovia XLR8 technology** allows detection of areas of the screen where changes occur and hence transmission of those areas only in compressed format. Similar techniques allow compression and optimized transmission of live audio and video.