Mconf: Global Webconferencing based on Open Source

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NRENs in the Dissemination of Innovative Low Cost Global Solutions: From Universities to the World
Denver, April 9th 2014 - Internet2 Global Summit
Agenda

Brief history
Introduction to Mconf
Mconf as a service for the NRENs
Q & A
History


RNP Experimental Service: Nov/2012 to date

Available at https://mconf.rnp.br
Introduction to Mconf

Mconf is an open source webconferencing system for Web and mobile devices
Mconf main characteristics

* easy to join and share

* open source = opportunities to collaborate in the development

* multiplatform = desktop, mobile, SIP and H.323¹

¹ under development
Use cases - streaming classes

Software Horror Stories

MISTAKES
It could be that the purpose of your life is
only to serve as a warning to others.

http://www.cs.tau.ac.il/~nachumd/horror.html
http://listverse.com/2012/12/24/10-seriously-epic-computer-software-bugs/

Fernando de Avila Bottin: Utilize o bate-papo para expor suas dúvidas - elas serão repassadas ao professor.
Use cases - defense of thesis and dissertations
Use cases - second medical opinion
Use cases - remote meetings
Why open source is important?

* continuously evolving

* developer community engagement

* highly customizable

* ecosystem with multiple companies to support the product
Mconf Scalable Architecture

Flexible access:

1. **Institution A**
   - Mconf-Web
   - Moodle
   - Recording Server

2. **Institution B**
   - Web Portal
   - Recording Server

Scalable infrastructure:

- Mconf Load Balancers (LBs)
- Mconf Monitoring Servers

Web conference servers:

- Mconf-Live
- Mconf-Live
- Mconf-Live

Desktop and mobile clients:

- Users

Mconf for Mobile:
Introduction to Mconf-Live

Flash based real-time collaboration environment
(no specific plugin required → full compatibility with Linux, Windows and Mac)

Open source, based on BigBlueButton
Introduction to Mconf-Live

* audio and video sharing
* public and private chat
* presentation sharing with whiteboard and pointer
* desktop sharing (presenter needs the Java plugin)
* shared notes
* record and HTML5 playback
* SIP integration
* mobile client compatible with iOS and Android (to be released)
Introduction to Mconf-Live
Introduction to Mconf-Web

Webconference rooms front-end

Each user has a personal room

Users create and join spaces for collaboration

Rooms are accessible with friendly URLs:
https://mconf.rnp.br/webconf/felipe
Introduction to Mconf-Web

Federated with Shibboleth

Authentication with LDAP as well
Introduction to Mconf-Web

NRENs in the Dissemination of Innovative, Low Cost Global Solutions: From Universities to the World

Event created by Felipe Cecagno

Speakers:
Daniela Brauner (RNP)
Michael Stanton (RNP)
Luiz Claudio Schara Magalhães (Universidade Federal Fluminense - UFF)
Iara Machado (RNP)
Felipe Cecagno (Federal University of Rio Grande do Sul)

Abstract:
Since 2002, RNP has has collaborated with the Brazilian research community in the joint development of advanced network services and products, funded by RNP. 11 years and 80 R&D projects later, we have significant results that can be, and have been, shared with sister NRENs, R&E institutions and industry, to motivate innovative partnerships for collaborative development, including the deployment of Global Service Models. In this session, we will present two of these results. SCIFI is an open source Intelligent control system for WiFi networks. The project, developed at the Fluminense Federal University (UFF), has built an extensible platform, including all the tools needed for installing, operating, securing and managing wireless networks, using low cost hardware and free software. Mconf is an open source Web conferencing system that enables the creation of a distributed and scalable network of Web conferencing servers, developed at the Federal University of Rio Grande do Sul (UFRGS). In addition to introducing Mconf, the presentation will also propose the creation of a Global Web Conferencing Experimental Service for R&E, connecting Mconf-based web conferencing services from different NRENs, to enable the discussion, testing and experimentation of a global and sustainable model.
# Introduction to Mconf Dashboard

The Mconf Dashboard provides a comprehensive view of the system's performance metrics. The dashboard includes real-time monitoring of total users, CPU usage, memory usage, and bandwidth usage. The graphs and charts help visualize the load balancer's performance and the distribution of users across different rooms.

## Key Metrics

- **Total Users**: 45 users are currently connected.
- **CPU Load**: The average CPU load is 2.01%.
- **RAM Used and Maximum**: The maximum RAM used is 247109 MB, and the maximum RAM is 23148.37 MB.
- **Bandwidth Received and Sent**: The received bandwidth is 1670.71 Kbps, and the sent bandwidth is 3466.78 Kbps.

## Distribution

- **Room Size Distribution**:
  - 43 users (33%)
  - 1 user (67%)

The dashboard also includes a map view showing the distribution of users across different servers and rooms, providing a clear overview of the system's performance and load distribution.
Introduction to Mconf Statistics Module
Mconf Global Network - Idea

Each institution will provide a (virtualized) server to be connected to the network

All institutions will benefit from the entire infrastructure

Users will access the conferences from their institution’s web portal

Recordings will be processed and hosted by the institution
Mconf Global Network - Main advantages

* high availability
* optimization of resources
* low setup and maintenance cost
* monitored environment
* detailed statistics and usage reports
* institutions will provide access to the service for their own users, and also control their permissions and store their data (including recordings)
* global collaborative open source development
Mconf Global Network Initiative

* Universidade Federal do Rio Grande do Sul - UFRGS (Brazil)
* Instituto Federal do Rio Grande do Sul - IFRS (Brazil)
* Universidade de São Paulo - USP (Brazil)
* Fundo Nacional de Desenvolvimento da Educação - FNDE (Brazil)
* Centro de Informática de Ribeirão Preto - CIRP (Brazil)
* Rede Nacional de Ensino e Pesquisa - RNP (Brazil)
* Hospital das Clínicas da UFMG (Brazil)
* Instituto Federal do Espírito Santo - IFES (Brazil)
* Mconf Tecnologia (Brazil)
* Consorcio Ecuatoriano para el Desarrollo de Internet Avanzado - CEDIA (Ecuador)
* Laboratorio Nacional de Materiales y Modelos Estructurales, Universidad de Costa Rica - LanammeUCR (Costa Rica)
* RedCONARE (Costa Rica)
* RedCLARA (Latin America)
* Belnet (Belgium)
* ThaiREN (Thailand)
* twiceware solutions e. K. (Germany)

16 institutions around the world
Mconf Global Network Initiative
Mconf Global Network in numbers (2013)

(meetings with 2 or more users)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of meetings</td>
<td>2959</td>
</tr>
<tr>
<td>Number of users</td>
<td>8863</td>
</tr>
<tr>
<td>Average meeting duration</td>
<td>90.98 minutes</td>
</tr>
<tr>
<td>Maximum number of simultaneous meetings</td>
<td>11</td>
</tr>
<tr>
<td>Average maximum number of users</td>
<td>2.9953</td>
</tr>
<tr>
<td>Maximum number of simultaneous users</td>
<td>90</td>
</tr>
</tbody>
</table>
Mconf Global Network in numbers

From Jan/2013 to Mar/2014

- Blue: Meetings
- Red: Users

Time:
- 2013/4
- 2013/7
- 2013/10
- 2014/1

Y-axis:
- 0 to 1600
Mconf Global Network in numbers

From Jan/2013 to Mar/2014

Hours of conference

Time
So now, what?

Would you like to test it locally in your institution?

We will install it in your own infrastructure **for free!**

Mail me to receive the requirements and instructions.
So now, what?

When you’re convinced it works great, let’s discuss a global service?

Join the mailing list http://bit.ly/mconf-global
Mail mconf-global@listas.rnp.br
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