

# Colaboratorio Deployment

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## **Abstract**

This document explains what is Colaboratorio and the general process to guide you to the deployment of it for your Research and Education Network. The first part - Introduction to Colaboratorio Services - makes an overview of the system, describe which are their services and makes a brief introduction of them. The second part - Colaboratorio Architecture and Deployment - explains the Colaboratorio's services architecture, what is required to deploy on a new infrastructure and also what set of services could be deployed locally and which ones need to be used on the cloud. Finally the third part - Integrating Colaboratorio Services to your IdP - Shows the technical specifications about software downloading, metadata exchanging and other can be find in COLABORATORIO Integrating Services document.

## **Versions**

Ver	Date	Author	Changelog
0	5/31/2016	Carlos González, RedCLARA	Original document
1	5/31/2016	Gustavo García, RedCLARA	About communities management (CM) service location
2	3/15/2017	Carlos González, RedCLARA	Introduction to Colaboratorio and Integrating Services sections added

## **Glossary**

CM: Colaboratorio's Communities Manager

IdP: SAML's Identity Provider

NREN: National Research and Education Network

REN: Research and Education Network

RREN: Regional Research and Education Network

SaaS: Software as a service

SAML: Security Assertion Markup Language

Shibboleth: An Internet2's java open source implementation of SAML

SimpleSAMLphp: An UNINETT's php open source implementation of SAML

SP: SAML's Service Provider

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# 1. Introduction to Colaboratorio Services

Colaboratorio is a virtual space to meet your peers and enhance the scientific and academic collaboration. Technically speaking, Colaboratorio is a set of interconnected tools, under a common federated authentication and authorization space. Other features include the user groups' mobility and the application level integration of services. Thanks to the ELCIRA and MAGIC projects Colaboratorio evolved to be a cloud service that can be incorporated into the portals of NRENs and RRENs globally. Today, the service is used by the NRENs in Latin-America, the Caribbean, Asia and Africa.

Currently, the platform counts with registered users around the world with the opportunity to participate in discussions and events of communities, create and participate in web conferences, transfer large files, postulating to funding opportunities and keep abreast of global events in their areas.

## 1.1 Services provided by Colaboratorio

Colaboratorio provides the following services:

### Communities Management Service

The Communities service allows the users to find groups that share their areas of interest and create new communities as a private space to use the other services of Colaboratorio.

### Videoconference Booking Service (SIVIC)

The Videoconferencing Room Booking System facilitates the search for qualified rooms for SIP/H.323 video-conferencing with multipoint units, aiming to maximize resources for the management of work teams or for the integration of research communities.

### Large Files Transfer Service (eNVIO)

The eNVIO service allows the user to transfer large files which cannot be attached to emails because they exceed the capacity.

eNVIO works by uploading large amounts of information to a server that provides a web

address from which any person or group the user wants will be able to download the material as many times as necessary in a certain frame of time.

### **VCEspresso Webconference System**

With VC Espresso the users will be able to communicate in real time, with image and sound, for as long as they want, with the members of their research community. It does not matter if the meeting is with one single person or 20; VC Espresso will facilitate the meetings since it places over user's preferred web browser.

### **Funding & Partners**

Funding and Partners is a tool of Communities Management. This is used to seek funding opportunities for the development of research projects and identify, among the users of the Colaboratorio, potential stakeholders to work together in the areas of interest of the user.

### **Wiki**

Each community in Colaboratorio has its own Wiki, which is a server that provides collaborative modification of their content and structure directly from the web browser.

### **Global Events Calendar**

Get to know the activities being undertaken by various scientific and academic communities around the world. Based on the Indico technology, this tool also allows you to organize the basis of the events and activities in your community.

### **Foodle**

Foodle is a service provided by UNINETT that allows inviting people, via email, to answer about their date and time preferences for meetings. Simply put, the administrator of the meeting informs its title/theme, objectives and a number of possibilities to be voted by the guests, allowing them to get a consensus.

## 2. Colaboratorio Architecture and Deployment

From the point of view of services interaction, Colaboratorio is a platform that consists of a communities manager (CM) service that acts like a service director and several support services as shown in Figure 1.

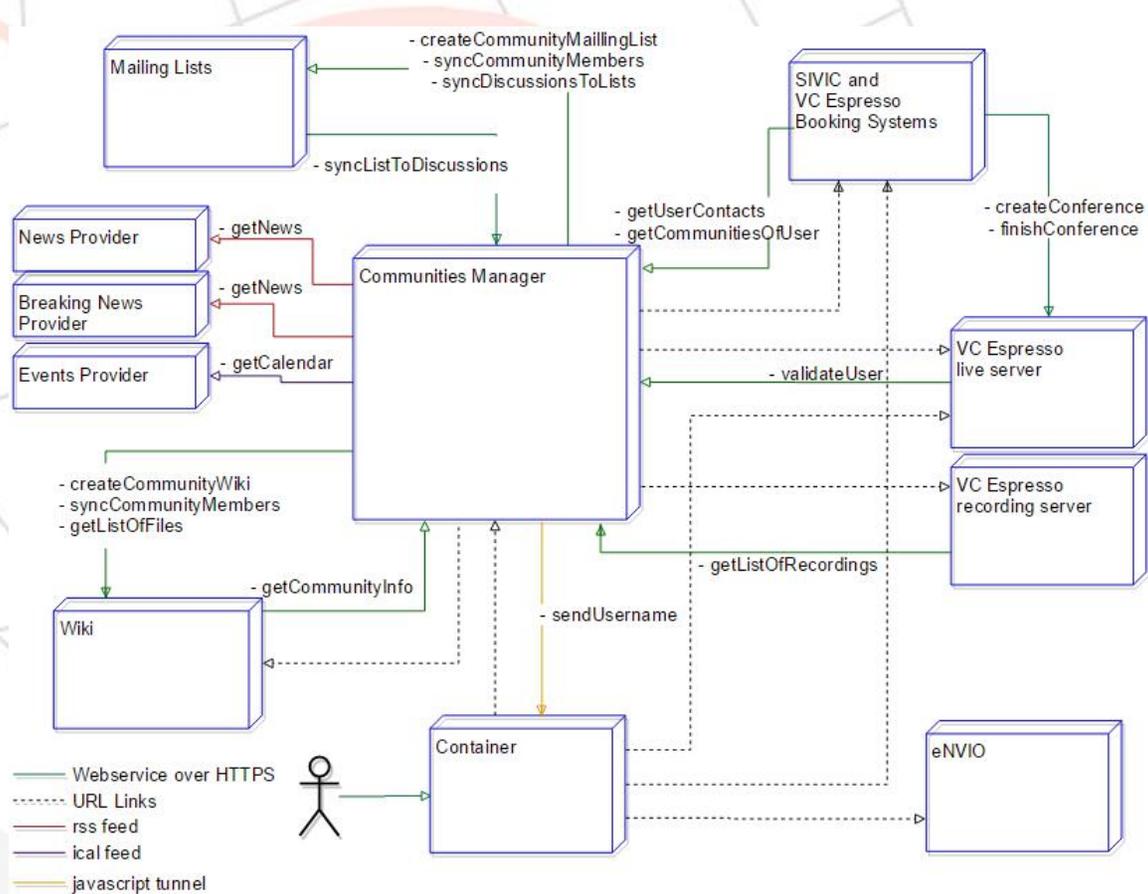


Figure 1. Relationship between Services of Colaboratorio.

The CM requires to be a central point provided by RedCLARA as a cloud service. However, the satellite services, although can be provided by RedCLARA on the cloud, can be also deployed as local services by the Regional or National Research and Education Network.

## 2.1 Quickstart deployment

For a quickstart Colaboratorio deployment, the first step is to create a container to access the CM and the set of services on the cloud.

System	Requirements	Number of users	Requires a valid SSL Certificate
Container	1 Linux server 2GB RAM 20GB HD	2500	No, but preferred.

This quickstart container will host just a set of HTML, CSS, JS and related files. All the system will be used as a service (SAAS) from the academic network (RedCLARA's, NORDUNET's and other academic institutions infrastructure).

## 2.2 Beyond the quickstart

The deployment of other services will be to install the selected services at the NREN infrastructure in a set of coordinated steps. The NREN can choose what services will be provided by the Regional Network and which ones will be used from RedCLARA's on the cloud, as shown in Figure 2.

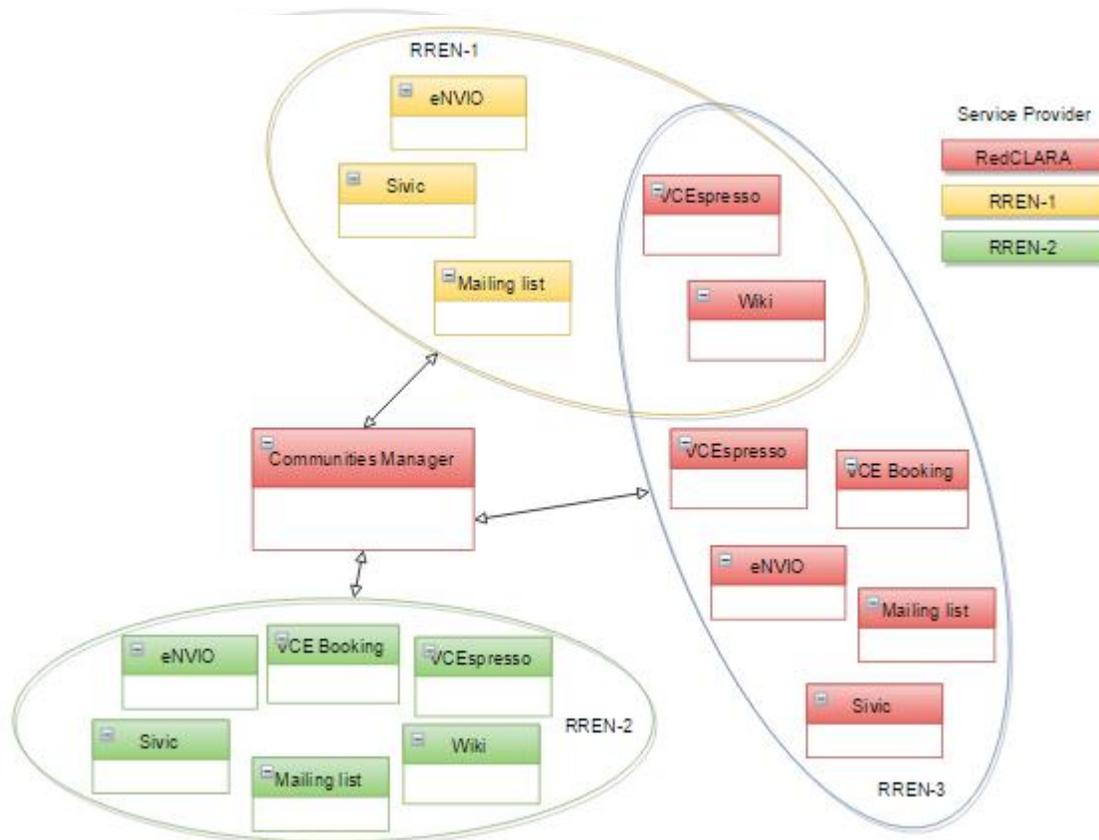


Figure 2. Ways as a REN can use Colaboratorio. RREN-1 is using 5 services, 2 of them, are provided by RedCLARA and three of them by the RREN itself. RREN-2 is providing all the satellite services itself. RREN-3 is using all the services on the cloud, provided by RedCLARA. In any case, they all use the CM from RedCLARA.

### 2.3 Requirements for local service deployment

These services, and the requirements for install each of them on the Regional or National Network infrastructure, are shown in the following table. Although this table does not show any software component, a special mention is done to show when the deployment requires a valid SSL certificated.

Specifications for a 2.500 users installation:

System	Requirements	Requires a valid SSL Certificate
VC Espresso (conference system)	1 Ubuntu server (webconference host) 14.04 LTS 64 bits 4GB RAM	No

System	Requirements	Requires a valid SSL Certificate
	60GB HD  1 Ubuntu server (recording) 14.04 LTS 64 bits 4GB RAM 500GB HD (Each hour of recording consume approximately 250MB)  Recommended (1 Backup server for webconference hosting): 1 Ubuntu servers 14.04 LTS 64 bits 4GB RAM 60GB HD	
eNVIO (large files transfer)	1 Linux server ( Recommended: Ubuntu 14.04 LTS or higher) 2GB RAM 100GB HD	Yes
Mailing list	1 Linux server ( Recommended: Ubuntu 14.04 LTS) Requires a previous and valid Postfix installation 2GB RAM 20GB HD	No
Wiki	1 Linux server ( Recommended: Ubuntu 14.04 LTS or higher) 2GB RAM 100GB HD	Yes

Finally, the set of services can increase as Colaboratorio is growing, both in the sense that new services are being added and their architecture is being enhanced to allow not only user-level integration through SAML, but also group integration through a system that will be deployed in the MAGIC project.

The following services are not yet deployable locally:

- Communities Management
- Sivic and VCE Booking system
- Global Events Calendar
- Foodle

## **2.4 About Colaboratorio communities management (CM) service location**

In the Colaboratorio model, the only service that is mandatory to be hosted by RedCLARA is the CM. An important element to clarify is the use of term “migration”. When mentioned in Colaboratorio, the term refers to the deployment of one or more of the supporting service elements. There are several reasons that lead to this model, among then:

- a) Colaboratorio is a global communities initiative where users around the world shall be capable of searching and joining communities everywhere. This feature requires to handle a single global database or a federated mechanism to interact with communities across the globe. Due to the mentioned federated mechanism does not exist yet, the single database is the current alternative. There is some work on group management in federations (GM) carried out under the MAGIC project that is the initial step towards this, nevertheless it will be at pilot stage at the end of TANDEM and MAGIC projects.
- b) The distribution, upgrade an support model is a barrier nowadays to implement the CM in a distributed fashion. There is no mechanism to provide support of it on a distributed architecture, and no way to upgrade or maintain the deployed infrastructures.

Colaboratorio will be continuously evolving. The current architecture is the most efficient model for the Regional or National Networks and collaboration between then. Deep thoughts and collaboration between all participant shall be done to advance in the model, services and the overall concepts.

## 3. Integrating Colaboratorio Services to your IdP

This section provides a guidance to allow the use of your IdP as a valid one for Colaboratorio's services provided on the Cloud. Can be use, indeed, as a model to integrate your IdP and the services provided locally.

Some examples of configuration for Shibboleth IdP are provided, however SimpleSAMLphp or any others SAML compliant idP are supported.

### 3.1 Scope

The services provided on the cloud for Colaboratorio that are on the scope of this section are:

Colaboratorio's Communities Service  
VC Espresso - web conference system  
SIVIC and VC Espresso Booking Systems  
eNVIO - Filesender Service  
Wiki

### 3.2 Downloading of the services

It's strongly recommended to contact RedCLARA before installing the services, as it's required to setup the central services, load balancers and others to ensure a smooth deployment. Also, RedCLARA can help you structuring a plan in order to deploy the services, so you can get the most of Colaboratorio with the less effort and your users can use the services as fast as possible (speaking about both deployment and speed of the service itself).

The container is the first service that needs to be deployed. It can be downloaded from

<http://gitlab.redclara.net/cgonzalez/colaboratorio-container/>

The recommendation is to deploy the container and then test all the services from the cloud. Then deploy once a time.

The other recommended services to deploy locally and the URLs for download and instructions to install can be found in the following table:

Service	Download URL	Installation Instructions
Container	<a href="http://gitlab.redclara.net/cgonzalez/colaboratorio-container/">http://gitlab.redclara.net/cgonzalez/colaboratorio-container/</a>	<a href="http://gitlab.redclara.net/cgonzalez/colaboratorio-container/blob/master/INSTALL.txt">http://gitlab.redclara.net/cgonzalez/colaboratorio-container/blob/master/INSTALL.txt</a>
VC Espresso (conference system)	<a href="https://github.com/mconf/wiki/wiki/Mconf-Network">https://github.com/mconf/wiki/wiki/Mconf-Network</a>	<a href="https://github.com/mconf/wiki/wiki/Mconf-Network">https://github.com/mconf/wiki/wiki/Mconf-Network</a>
eNVIO (large files transfer)	<a href="https://github.com/filesender/filesender/releases/tag/1.7-beta1">https://github.com/filesender/filesender/releases/tag/1.7-beta1</a>	<a href="https://app.assembla.com/spaces/file_sender/wiki/Installation_-_Linux_Source">https://app.assembla.com/spaces/file_sender/wiki/Installation_-_Linux_Source</a>
Mailing list	You'll need to deploy Mailman or Sympa. Ask RedCLARA for integration specifications.	
Wiki	You'll need to deploy mediawiki. Ask RedCLARA for integration specifications.	

### 3.3 Meta-data of the services

It's strongly recommended to use the general meta-data from <https://nrenadmin.redclara.net/Metadato-Colaboratorio/metadato-fedclara-sps.xml>, as it keeps updated with the new services provided, so it's not required to make any change in your system whether a service is added, changed or removed. However, individual meta-data can be found in the following table.

Service	Metadata download URL
<b>All services (method preferred)</b>	<a href="https://nrenadmin.redclara.net/Metadato-Colaboratorio/metadato-fedclara-sps.xml">https://nrenadmin.redclara.net/Metadato-Colaboratorio/metadato-fedclara-sps.xml</a>
Colaboratorio's Communities Service	<a href="https://dev1.redclara.net/Shibboleth.sso/Metadata">https://dev1.redclara.net/Shibboleth.sso/Metadata</a>
SIVIC - H323 Booking System	<a href="https://sivic.redclara.net/Shibboleth.sso/Metadata">https://sivic.redclara.net/Shibboleth.sso/Metadata</a>
VCEspresso Booking System	<a href="https://sivic.redclara.net/Shibboleth.sso/Metadata">https://sivic.redclara.net/Shibboleth.sso/Metadata</a>
eNVIO - Filesender Service	<a href="https://filesender.redclara.net/simpleSaml/module.php/saml/sp/metadata.php/default-sp">https://filesender.redclara.net/simpleSaml/module.php/saml/sp/metadata.php/default-sp</a>
Wiki	<a href="https://wiki2.redclara.net/Shibboleth.sso/Metadata">https://wiki2.redclara.net/Shibboleth.sso/Metadata</a>
Global Agenda	<a href="https://eventos.redclara.net/Metadata/sp-eventos-metadata.xml">https://eventos.redclara.net/Metadata/sp-eventos-metadata.xml</a>
VC Espresso web conference system	No Metadata is required. The webconference doesn't require SAML.

In Shibboleth this information should be part of the relying-party.xml or metadata-providers.xml files inside of the \$IDP\_HOME/config directory.

The usual configuration there would be:

```
<MetadataProvider id="metadata-fedclara"
  xsi:type="FileBackedHTTPMetadataProvider"
  backingFile="%{idp.home}/metadata/metadata-fedclara-sps.xml"
  metadataURL="https://nrenadmin.redclara.net/Metadata-Colaboratorio/metadata-fedclara-sps.xml">
  <MetadataFilter xsi:type="EntityRoleWhiteList">
    <RetainedRole>md:SPSSODescriptor</RetainedRole>
  </MetadataFilter>
</MetadataProvider>
```

The set of attributes required for each service can be found in the meta-data, however, it's wrote down here for reference:

Service	Metadata download URL
Colaboratorio's Communities Service	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"
	FriendlyName="surname" Name="urn:oid:2.5.4.4"
	FriendlyName="givenName" Name="urn:oid:2.5.4.42"
SIVIC - H323 Booking System	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"
	FriendlyName="surname" Name="urn:oid:2.5.4.4"
	FriendlyName="givenName" Name="urn:oid:2.5.4.42"
VCEspresso Booking System	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"
	FriendlyName="surname" Name="urn:oid:2.5.4.4"
	FriendlyName="givenName" Name="urn:oid:2.5.4.42"
eNVIO Filesender Service	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"
	FriendlyName="cn" Name="urn:oid:2.5.4.3"
	FriendlyName="surname"

Service	Metadata download URL
	Name="urn:oid:2.5.4.4"  FriendlyName="givenName" Name="urn:oid:2.5.4.42"
Wiki	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"  FriendlyName="surname" Name="urn:oid:2.5.4.4"  FriendlyName="givenName" Name="urn:oid:2.5.4.42"
Global Agenda	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"  FriendlyName="surname" Name="urn:oid:2.5.4.4"  FriendlyName="givenName" Name="urn:oid:2.5.4.42"
Foodle	FriendlyName="mail" Name="urn:oid:0.9.2342.19200300.100.1.3"  FriendlyName="cn" Name="urn:oid:2.5.4.3"  FriendlyName="displayName" Name="urn:oid:2.16.840.1.113730.3.1.241"

In Shibboleth you should set up this attributes in the `$IDP_HOME/config/attribute-filter.xml` file in order to send them to the services. The following are the Services ID you'll need to configure there:

```

https://dev1.redclara.net/shibboleth
https://documentos.redclara.net/shibboleth
https://etherpad-dev.redclara.net/shibboleth
https://etherpad.redclara.net/shibboleth
https://filesender.redclara.net/simplesaml/module.php/saml/sp/metadata.php/default-sp
https://eventos.redclara.net/shibboleth-sp
https://sivic.redclara.net/shibboleth
https://wiki2.redclara.net/shibboleth

```

It's recommended that you set the logs to a deeper logging level in order to find easily any problem in the integration. In shibboleth this could be done in the file `$IDP_HOME/config/logback.xml`. The suggested variables to set at a DEBUG level are:

```

idp.loglevel.idp
idp.loglevel.ldap
idp.loglevel.messages
idp.loglevel.opensaml

```

The logs can be found in `$IDP_HOME/logs/idp-process.log`

After a successful deployment, these variables must be set back to their original value. INFO is the usual one.

### **3.4 References**

Basic information about services:

<http://www.redclara.net/index.php/en/productos-y-servicios/servicios-para-la-colaboracion>

Services' Web Tutorials:

<http://www.elcira.eu/tutorials.html>

Elcira Project:

<http://www.elcira.eu>

Magic Project:

<http://magic-project.eu>

Media Wiki:

[https://www.mediawiki.org/wiki/Manual:What\\_is\\_MediaWiki](https://www.mediawiki.org/wiki/Manual:What_is_MediaWiki)