

QualiPSo

Quality Platform for Open Source Software

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VoIP service

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1 EXECUTIVE SUMMARY

This document describes the implementation of the VoIP conferences services of the QualiPSo Factory.

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2 CONTENT

2.1 Description of the service and the respective software

The VoIP audio/video calls service aims at providing the functionality to the members of a project to plan and manage an agenda of audio/video conference calls. The service allows the users to keep record (by viewing, creating, deleting, etc) of all their scheduled conferences. Furthermore, the VoIP audio/video calls service inter-operates with other Factory service (Calendar service), in order to support the implementation of the necessary business processes.

The implementation of the VoIP service is based on the Asterisk-Java library which allows to integrate Asterisk with Java code.

The second version of the VoIP audio/video calls service is already available and integrated in the QualiPSo Factory. The corresponding mash-up interface is also available. Currently the following components comprise the VoIP audio/video calls service of the QualiPSo Factory:

- mash-up interface (Task 7.2.2),
- Web Service exposing the functionalities,
- assembler for the ESB.

A description of each VoIP-related operation is given in the following:

kickUser

Removes this user from the conference room.

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

kick status (conference owner may kick user)

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

banUser

Bans user from entering the conference (kicks out of conference and adds to the ban list)

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

ban status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

unbanUser

Unban user

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`voipUsername` - username for unban

Returns:

unban status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

isUserBanned

Check if user is banned

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

if is user banned

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listBannedUsers

Lists all the users that are banned from a conference

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - selected conference number

Returns:

list of banned users

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

muteUser

Stops sending voice from this user to the conference room.

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

mute status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

unmuteUser

(Re)starts sending voice from this user to the conference room.

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

unmute status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

isUserMuted

Check if user is muted

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

true when user is muted in conference

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

isUserTalking

Check if user is talking during conference

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

`userConferenceId` - userid in conference

Returns:

true when user is talking during calling method

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

lockConf

Lock conference

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

Returns:

lock conference status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

unlockConf

Unlock conference

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

Returns:

unlock conference status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

endConference

Ends the selected conference and adds it to the past conferences list

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

Returns:

returns true if the conference was succesfully ended

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listUsers

Returns the list of all users that have VoIP accounts on the server

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

Returns:

list of VoIP users

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

activateVoipProfile

Creates a new standard VoIP account (SIP and IAX)

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`voipUsername` - voip username account

`secret` - voip password for account

email - user email
firstname - user firstname
lastname - user last name
qualipsoUserId - qualipso user id

Returns:

created username account

Throws:

org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException

deactivateVoipProfile

Removes VoIP user account (SIP and IAX)

Parameters:

userId - userid (authenticate in calling method)
pass - password (authenticate in calling method)
voipUsername - voip username

Returns:

Throws:

org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException

isVoIPProfileExists

Check if VoIP profile exists

Parameters:

userId - userid (authenticate in calling method)
pass - password (authenticate in calling method)
voipUsername - voip username

Returns:

true when profile exists, false in other case

Throws:

org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException

loginStatus

Check if user can be logged into system

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

Returns:

status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getVoipUsername

Get the voipUsername of selected conference participant

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - selected conference number

`userConferenceId` - userid in conference

Returns:

voip username for selected user

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

usernameFromQualipsoUsers

Get qualipso username from requested asterisk user

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

voipUsername - voip username

Returns:

qualipso username

Throws:

org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException

editConference

Edit the conference room settings

Parameters:

userId - userid (authenticate in calling method)
pass - password (authenticate in calling method)
confNo - Conference room number
owner - New owner of the conference
accessType - Conference AccessType
permanent - Is the conference permanent
pin - Conference access pin number
adminpin - Conference admin access pin number
startDate - When the conference begins
endDate - When the conference ends
maxUsers - Maximum number of participants
name - Name of the conference
agenda - Agenda for the conference
recorded - Is the conference recorded

Returns:

-1 when error occurred, in other case return edited conference number

Throws:

org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException

editConferenceHR

Edit the conference room settings (humna readable format)

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`confNo` - Conference room number
`owner` - New owner of the conference
`accessType` - Conference AccessType
`permanent` - Is the conference permanent
`pin` - Conference access pin number
`adminpin` - Conference admin access pin number
`startDateHR` - When the conference begins (human readable format)
`endDateHR` - When the conference ends (human readable format)
`maxUsers` - Maximum number of participants
`name` - Name of the conference
`agenda` - Agenda for the conference
`recorded` - Is the conference recorded

Returns:

-1 when error occurred, in other case return edited conference number

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

createConference

Create conference

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`owner` - Owner name
`accessType` - Conference access type
`permanent` - Is conference permanent
`pin` - Conference access pin
`adminpin` - Conference admin access pin
`startDate` - When the conference begins

`endDate` - When the conference ends
`maxUsers` - Maximum number of participants
`name` - Name of the conference
`agenda` - Conference agenda
`recorded` - Is the conference recorded
`project` - project reference

Returns:

conference number (-1 in case of error)

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

createConferenceHR

Create conference (human readable format)

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`owner` - Owner name
`accessType` - Conference access type
`permanent` - Is conference permanent
`pin` - Conference access pin
`adminpin` - Conference admin access pin
`startDateHR` - When the conference begins
`endDateHR` - When the conference ends
`maxUsers` - Maximum number of participants
`name` - Name of the conference
`agenda` - Conference agenda
`recorded` - Is the conference recorded
`project` - project reference

Returns:

conference number (-1 in case of error)

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConfere  
nceServiceException
```

addUserToConference

Adds user to the conference invited list

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`voipUsername` - voip username
`confNo` - selected conference number

Returns:

false if error occurred

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConfere  
nceServiceException
```

removeUserFromConference

Remove user from conference invited users list

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`voipUsername` - voip username
`confNo` - selected conference number

Returns:

false if error occurred

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConfere  
nceServiceException
```

getConferenceDetails

Gets details of the conference room

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`confNo` - selected conference number

Returns:

ConferenceDetails object with information about conference room

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getConferencesDetailsList

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`voipUsername` - voip username
`type` - type of conferences
`project` - project identifier

Returns:

list of conferences

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

removeConference

Remove existing conference

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`confNumber` - conference number

Returns:

removing status

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConfere  
nceServiceException
```

listParticipants

Get the participants list of a conference

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - conference number

Returns:

list of participants

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConfere  
nceServiceException
```

getParticipantsListHR

Get list in humanreadable format

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - selected conference number

Returns:

participants list in human readable format

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConfere  
nceServiceException
```

listInvitedUsers

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`confNo` - selected conference number

Returns:

list of invited users

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listConferences

Get the list of all active conferences

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`project` - project identifier

Returns:

list of all active conferences

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

isPastConference

Check if selected conference is past

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`voipUsername` - voip username

`confNo` - selected conference number

`project` - project reference

Returns:

conference status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listPastConferences

Get the list of all past conferences of a user

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`voipUsername` - voip username
`project` - project reference

Returns:

list of conference

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getRecordings

Gets paths to conference recordings

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`confNo` - selected conference number

Returns:

object containing paths to conference recordings

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listConferencesByOwner

Get the list of conferences by owner

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`voipUsername` - voip username

`project` - project reference

Returns:

list of user's conferences

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listConferencesByInvitation

Get the list of conferences user invited to

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`voipUsername` - voip username

`project` - project reference

Returns:

list of conferences

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

listPublicConferences

Get the list of public conferences

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

`project` - project reference

Returns:

list of conferences

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

setConferenceUserList

Sets the conference list of invited users

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`confNo` - conference number
`userList` - List of users to invite

Returns:

false if error occurred

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getJoinDate

Get the join date of a conference participant

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)
`confNo` - selected conference number
`userConferenceId` - userid in conference

Returns:

join date in seconds

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getJoinDateHR

Get the join date of a conference participant in human readable format

Parameters:

`userId` - userid (authenticate in calling method)
`pass` - password (authenticate in calling method)

`confNo` - selected conference number

`userConferenceId` - userid in conference

Returns:

join date in human readable format

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

resetDatabase

Resets the database to it's initial settings (removes all users and conferences)

Parameters:

`userId` - userid (authenticate in calling method)

`pass` - password (authenticate in calling method)

Returns:

status

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getServiceVersion

Get service version

Returns:

service version

Throws:

`org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException`

getAsteriskVersion

Get asterisk version

Returns:

asterisk version

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException
```

isDBOpen

Check database status

Returns:

database status

Throws:

```
org.qualipso.factory.voipservice.QualipsoVoIPConferenceServiceException
```

2.2 Software installation instructions

Prerequisites

Before installing VoIP software should be prepared base environment. The following software (rpm packages) should be pre-installed:

- gcc (min. version 4.3.x)
- gcc-c++ – C++ support for GCC (min. version 4.3.x)
- make – A GNU tool which simplifies the build process for users
- zlib-devel – Header files and libraries for Zlib development
- ncurses-devel – Development files for the ncurses library
- kernel-devel / kernel-sources – Development package for building kernel modules to match the kernel

Kernel modules

For enabling full functionality and using conference feature in asterisk dahdi kernel module have to be installed. Software can be installed from linux packages or from sources. Below there is a short description how to install dahdi kernel in linux system. For this steps **administrator** account is required.

- Download current software version from web page:

```
wget http://downloads.asterisk.org/pub/telephony/dahdi-linux/dahdi-linux-current.tar.gz
```
- unpack archive
- compile dahdi-linux sources
go to unpacked directory with dahdi-linux sources

make

- install dahdi-kernel compiled files

make install

When kernel modules on linux operation system will be updated (eg. kernel version)

2.3 Download location

Source code for VoIP conference service is located in subversion repository

<https://scm.gforge.inria.fr/svn/qualipso/trunk/factory/factory-service-voip-conferences>

2.4 Web service installation

After downloading source code Factory web service can be build calling maven targets

```
mvn clean process-resources process-sources compile axis2-java2wsdl:java2wsdl package war:war install
```

2.5 Version and License information

This software is the second release (v2.0) of the VoIP service, that has been developed by providing a SOAP interface to the Asterisk and Openmeetings application.

The license used has been GPL v3, as it is indicated in the source code files.