

OFBiz CRM & Asterisk Call Center Integration

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Agenda

- Who am I ?
- Asterisk
- Architecture
- Implementation process
- Outgoing calls
- Incoming calls
- Implementation details
- Demo



Resources

- **Asterisk: the Future of Telephony**, 2nd edition
by Jim Van Meggelen, Leif Madsen, and Jared Smith
- <http://www.voip-info.org/>
- <https://maven.reucon.com/projects/public/asterisk-java>
- <https://tomcat.apache.org/tomcat-7.0-doc/web-socket-howto.html>
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Who am I ?

- 35 Years old, married, 4 children
- Born In Mauritania
- Bachelor degree from Hashemite University (Jordan)
- Professional Master Admin Systems & Networks from Reims University (France)
- Started working with OFBiz In 2008 (Néréide)
- Since October 2014 have been working for an OFBiz End User company

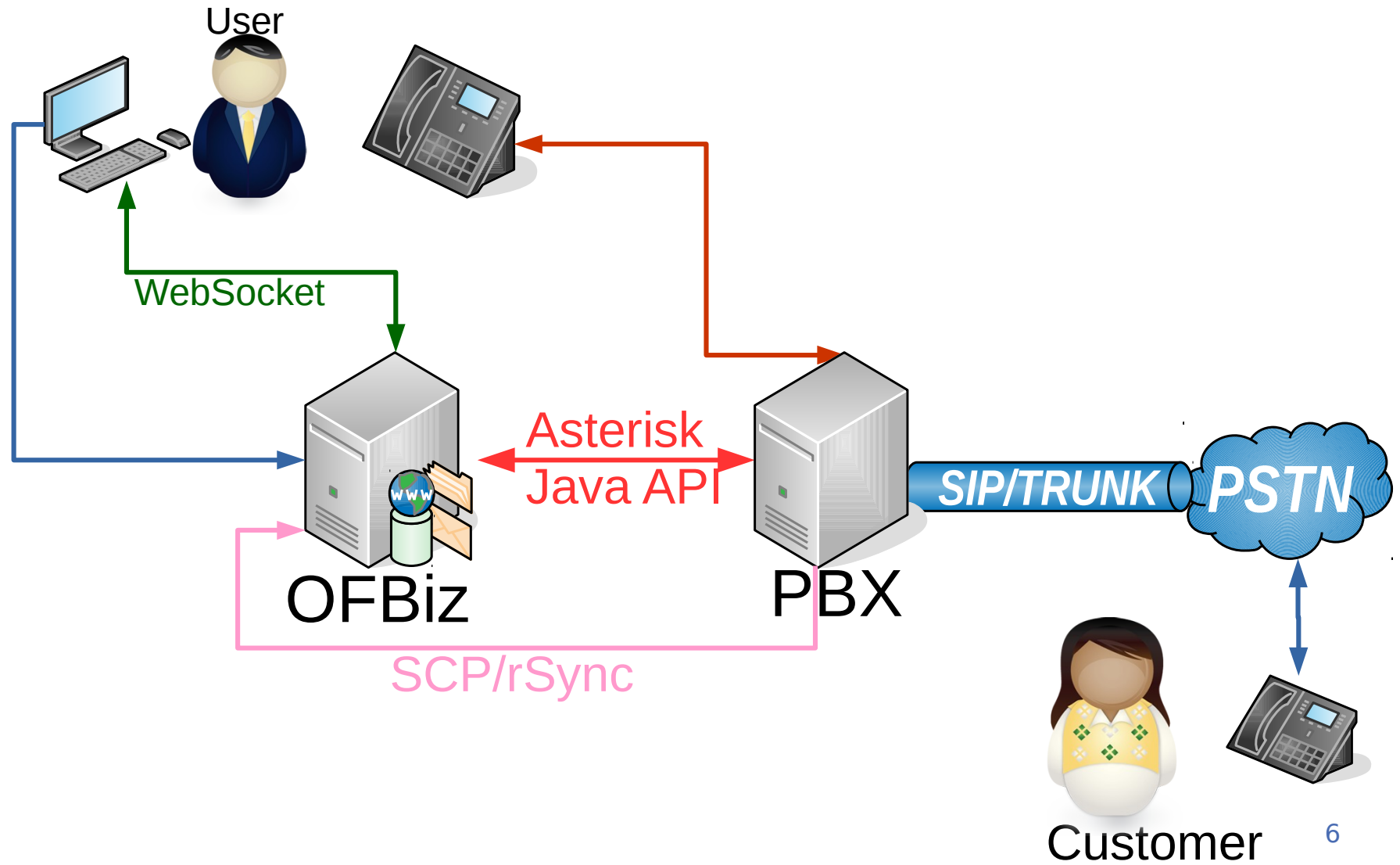


Asterisk

- Open source telephony platform framework(Software PBX)
- Very customizable
- Features
 - Voice-mail
 - Hosted Conferencing
 - Call Queuing
 - MOH
 - Call Parking
 - IM
 - Fax
 - SMS
 - ...
- Too many configuration files
- Well documented but still complicated to master the framework.
- Elastix is good alternative (web interface for configuration)



Architecture





Implementation process

- Initialize Asterisk-java API
- Create SIP accounts, trunk and dialplan
- Assign phone numbers to OFBiz users
- Create call groups, associate theme to external phone lines
- Associate OFBiz users to call groups
- Create websocket on each OFBiz view with an authenticated user



Implementation details

fbiz The Apache Open for Business Project

Applications ▾ Party Manager ▾ **Call center configuration**

THE PRIVILEGED ADMINISTRATOR Language Visual Themes Logout ?

Call center groups

Phone number: 0033533120024 ▾
Description:
Create comm. event? Yes No
Record call for this group? Yes No

Create **Back**

PHONE NUMBER	DESCRIPTION	CREATE COMM. EVENT ?	RECORD CALL FOR THIS GROUP ?
0033533120022	service consommateurs	Yes	Yes

Group members

Party Id:
User Login ID:
Ext. number: 100 ▾
Thru Date:

Create **Back**

PARTY ID	USER LOGIN ID	EXT. NUMBER	FROM DATE	THRU DATE
admin	_NA_	100	2015-08-28 14:38:20.843	



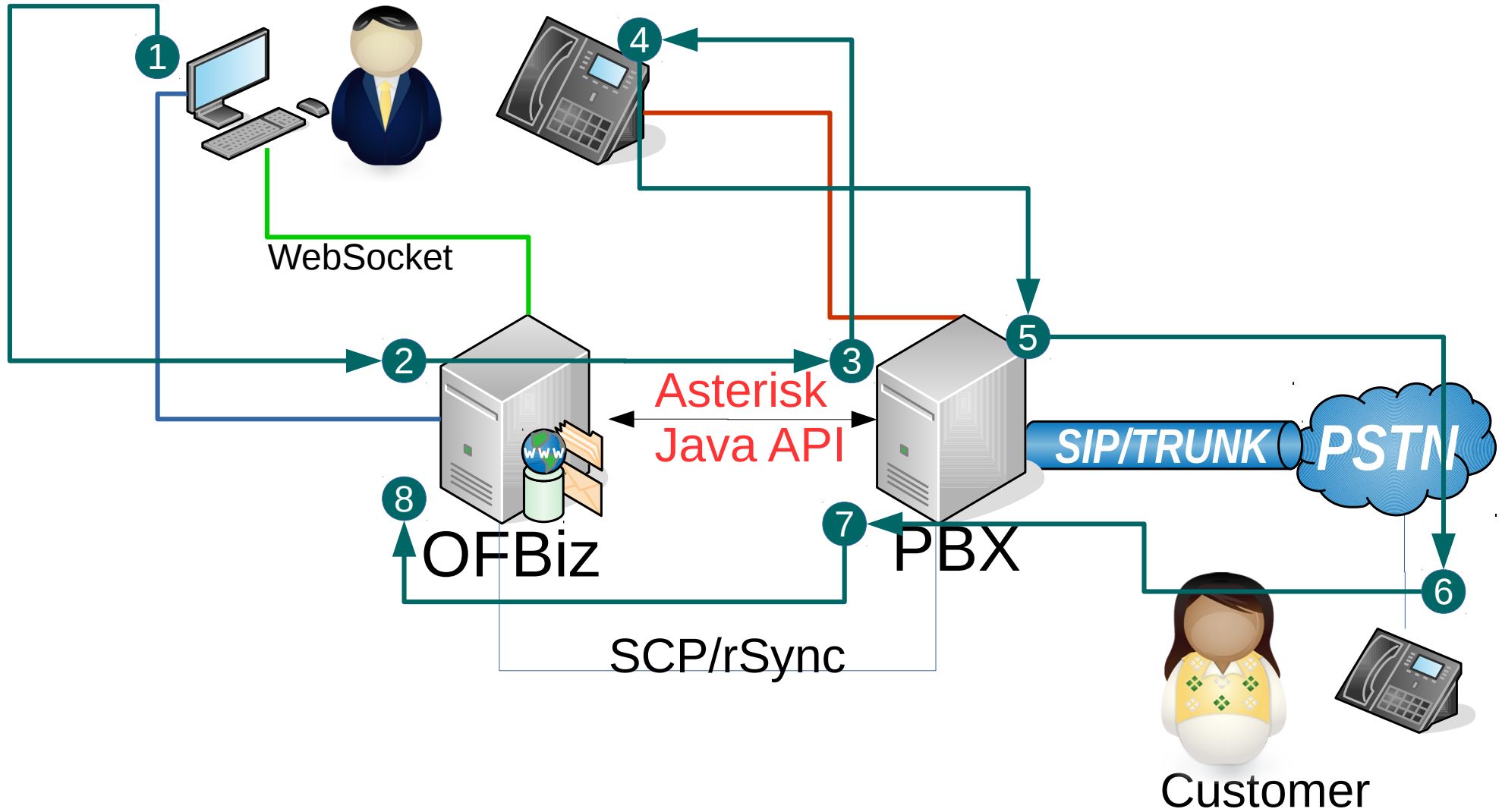
Outgoing call

- **Outgoing call**

- 1) The OFBiz user calls a phone number using the OFBiz screen
- 2) An OFBiz service is called using a normal OFBiz request
- 3) The OFBiz service uses the ASP to send an OriginateRequest to Asterisk
- 4) Asterisk rings the OFBiz user's internal phone number
- 5) The OFBiz user picks up their phone
- 6) Asterisk then dials the requested outgoing phone number
- 7) Asterisk then connects both channels and notifies OFBiz
- 8) OFBiz creates a new CommEvent (and associates a file for recording the call to the CommEvent)
- 9) When the phone call is finished, Asterisk creates the recording file



Outgoing call





Implementation details

Contact Information			Create New
Contact Type	Contact Information	Soliciting OK?	
Phone Number	Primary Phone Number 0652292638 lookup:anywho.com Look up White pages (Updated: 2015-08-28 22:50:08.858)	()	UPDATE Expire
	Primary Email Address ofbiztest@example.com send email (Updated: 2009-01-09 00:00:00.000)	(Y)	UPDATE Expire



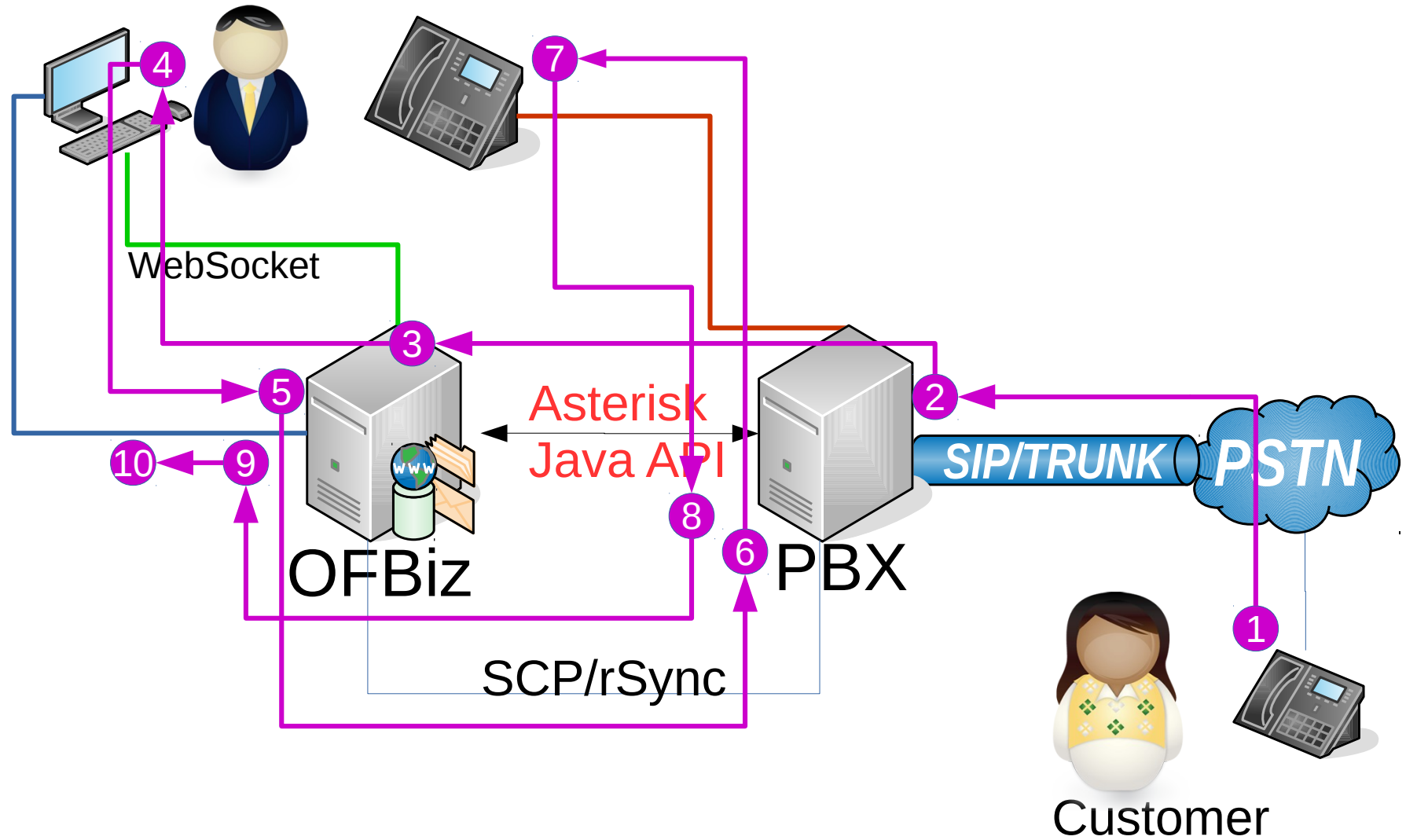
Incoming call

● Incoming calls

- 1) A Customer dials the Support Service number
- 2) Asterisk receives the call and creates a new channel for it
- 3) The ASP receives a notification for the new event
- 4) OFBiz notifies the support group's connected members about the incoming call
- 5) One of the support group members clicks the Answer button on the OFBiz screen to tell OFBiz that they will accept the call
- 6) OFBiz asks Asterisk to redirect the call to this specific user (support group member)
- 7) Asterisk then rings the user's phone
- 8) The user picks up his phone and speaks to the Customer
- 9) Asterisk notifies OFBiz of the redirection success
- 10) OFBiz creates a new CommEvent with Associated content for the recording file



Incoming call





Incoming call notification

The screenshot displays a web application interface with a notification banner at the top. The banner contains the text "French Customer is calling" and a blue "Answer" button. Below the banner is a navigation bar with the "ofbiz" logo and the text "The Apache Open for Business Project". The navigation bar includes "Applications", "Order Manager Application", and "Requests" (highlighted in yellow). Below the navigation bar, the user is identified as "THE PRIVILEGED ADMINISTRATOR" and there are links for "Language", "Visual Themes", and "Logout". A "NEW REQUEST" button is visible in the main content area, and a "Search Options" bar is at the bottom.



Implementation details

List Communications FrenchCustomer

SUBJECT	TYPE	STATUS ID	PARTY ID	ROLE TYPE ID	ROLE STATUS ID	CREATED	SENT
Phone Call[10030]	Phone	In-Progress	French Customer [FrenchCustomer]	Originator	Closed	9/2/15	9/2/15
No Subject[10020]	Phone	In-Progress	French Customer [FrenchCustomer]	Originator	Closed	8/31/15	8/31/15
No Subject[10010]	Phone	In-Progress	French Customer [FrenchCustomer]	Originator	Closed	8/31/15	8/31/15
No Subject[10000]	Phone	In-Progress	French Customer [FrenchCustomer]	Originator	Closed	8/30/15	8/30/15

Communication Event Id 10030

Communication Event

Communication Event Id 10030
Contact List Id []
Status ID In-Progress
Start Date 2015-09-02 13:18:59.415
Finish Date/Time
Subject Phone Call

Content

Content

Related Information

Communication Event Roles

PARTY ID	CONTACT MECH ID	ROLE TYPE ID	STATUS ID
French Customer [FrenchCustomer]	10050	Originator	Closed
Non renseigné [_NA_]		Addressee	Created

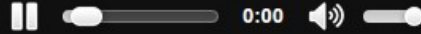
Communication Content

CONTENT NAME	DELETE
phone call recording [10030]	Delete

Child Communication Events

SUBJECT	TYPE	STATUS ID	PARTY ID	ROLE TYPE ID	ROLE STATUS ID	CREATED	SENT
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localhost:8080/partymgr/control/ViewSimpleContent;jsessionid=F284D02840C9074ACBDB41





Implementation details

1/5

- Apache OFBiz Release 13.07
- Elastix 2.4.0
- Add-on portlet-party from ofbizextra.org
- Tomcat WebSocket API
- Asterisk-Java API



- AsteriskContainer
 - Read configuration file
 - Initialize connection
 - Bring up Asterisk service provider
- AsteriskServiceProvider
- AsteriskWebSocketServlet
 - `externalLoginKey`
- Add a small panel on each OFBiz screen (authenticated users)
- Create a new webApp for web sockets



Implementation details

3/5

- Keep manager connection a live Thread
- Call recording Thread
- Asterisk phone numbers reading Thread
- New tables
 - AsteriskPeer
 - CallCenterGroup
 - GroupMembership
- A new Portal Page to configure the Call Center



- **WebSocket messages:**
 - Json format
 - Message Type
- **Client → Server Messages :**
 - Get user Profile URL (GURL)
 - Redirect (RD)
- **Server → Client Messages:**
 - Incoming call (NC)
 - Incoming call redirected (OC)
 - User profile URL (URL)



- Configuration parameters :
 - CallRecordingFilesLocation
 - RecorOutCALLs
 - PartyProfileUrl
 - UniqueUserSession
 - autoFillExtensionAndTrunk



Q&A

Any Questions ?



THANK YOU VERY
MUCH!