



CommTEL OBD – Automated Outbound Dialer on CommTEL platform

Marketing White-paper

Version 1.0



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Created on 12th July 2008

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India.

Publishing History

Version number	Release Date
1.0	12 th July 2008

Table of Contents

A. Introduction.....	5
A.1 Overview.....	5
A.2 Operational modes supported by the CommTEL-OBDD	7
A.3 Current platforms	7
B. Architecture of CommTEL – OBDD.....	7
B.1 Overview.....	8
B.2 Component layout.....	10
C. Sample Implementation Scenario.....	11
D System requirements	12
E Contact Information	12

A. Introduction

This white paper provides detailed information about CommTEL Outbound Dialer (OBD) – an automated outbound voice dialer application based on the CommTEL platform, which provides a campaign communication mechanism that provides the benefits and features that are exclusive to this technology.

A.1 Overview

CommTEL-OBD, as already introduced, is an automated voice dialer application that automates the functionality of outbound call operations. In situations where outbound calls need to be made with relatively lower levels of interaction except passing the campaign message, the OBD can provide extremely effective and efficient mode of campaigning.

CommTEL-OBD is a campaign technology, which uses state-of-the-art communication technologies and combines them into a very simple and effective solution for the most direct campaign mechanism possible. The features are discussed in detail in the later sections.

. The OBD introduces a unique caching mechanism, which helps to eliminate call congestion, and ensures consistently high throughput.

The OBD works on the standard ISDN PRI #ss7 and Sip interfaces

The OBD has certain unique aspects that make it a powerful tool

- An intelligent algorithm to eliminate call congestion & improve call throughput.
- The campaign message can be varied for each call.
- Can detect standard call responses, including answering machines & fax tones.
- Supports DNC / DND lists.

Features	OBD CommTEL	Others
Signaling compatibility - compatible with SS#7, ISDN PRI or SIP trunk based telephony	Yes	No
Adaptive dialing – intelligence to detect congestion & adjust dialing speed to optimize dialing loads	Yes	No
Roaming detect - if the called party's status is "00" in the ACM, the call will not be placed, as the party is in international roaming	Yes	No
BI – the solution is equipped with Business Intelligence & analytics tools (using Pentaho) which enables reports, analytics & drills on the fly	Yes	No

Hybrid architecture – the dialers could be distributed across the circles to enable local MSCs to make calls, but the administration is centralized	Yes	No
Present when ready – the OBD message will be played only when the caller says “hello” with talk-detection	Yes	No
3G ready – the same solution (h/w & s/w) setup can handle 3G services like video calls without any additional setup changes	Yes	No
Call scheduler – schedule OBD calls on events / dates	Yes	No
Speech integrated – unique self-service capabilities can be built using speech recognition with “spoken” responses for name based servicing (place, item, location, etc). Works with Nuance, Telisma, Sphinx (free for basic responses)	Yes	Limited
Retry configuration – easily configure retry attempts, time gaps, alternative responses (SMS), etc	Yes	Yes
Number of rings – number of rings to timeout (disconnect call) can be configured campaign wise	Yes	Yes
Support – complete solution (hw/ + s/w) is built & managed from scratch in-house, hence service & resolution is prompt & decisive without any external dependencies	Yes	Limited
Payment IVR – can be integrated with an in-house PCI DSS v1.2 certified secure payment IVR to process card based payment, which will enable sale closures over a single call to the IVR!!!	Yes	No
Voice menu – provides service menu with intelligible prompts and usual DTMF responses	Yes	Yes
Subscription – depending on selection, the caller can be subscribed to the service through a web service interface or http interface or Java API call	Yes	Yes
DNC / DND - The system is capable of DNC / DND scrubbing	Yes	Yes
MIS – as already mentioned the solution is equipped with a BI engine and can deliver reports, analytics on the fly	Yes	Limited
GUI – complete admin & configuration manager modules are GUI based for easier usability	Yes	Yes
SMS integration – integrated SMS gateway with SMPP client	Yes	Yes

A.2 Operational modes supported by the CommTEL-OBD

The CommTEL-OBD supports 3 modes of operations, depending on the type & requirements of the campaign being conducted. The 3 modes are as follows

Campaign-list dialing – A list of pre-defined numbers are provided to the system and the numbers are dialed sequentially. The client running the campaign usually provides the list.

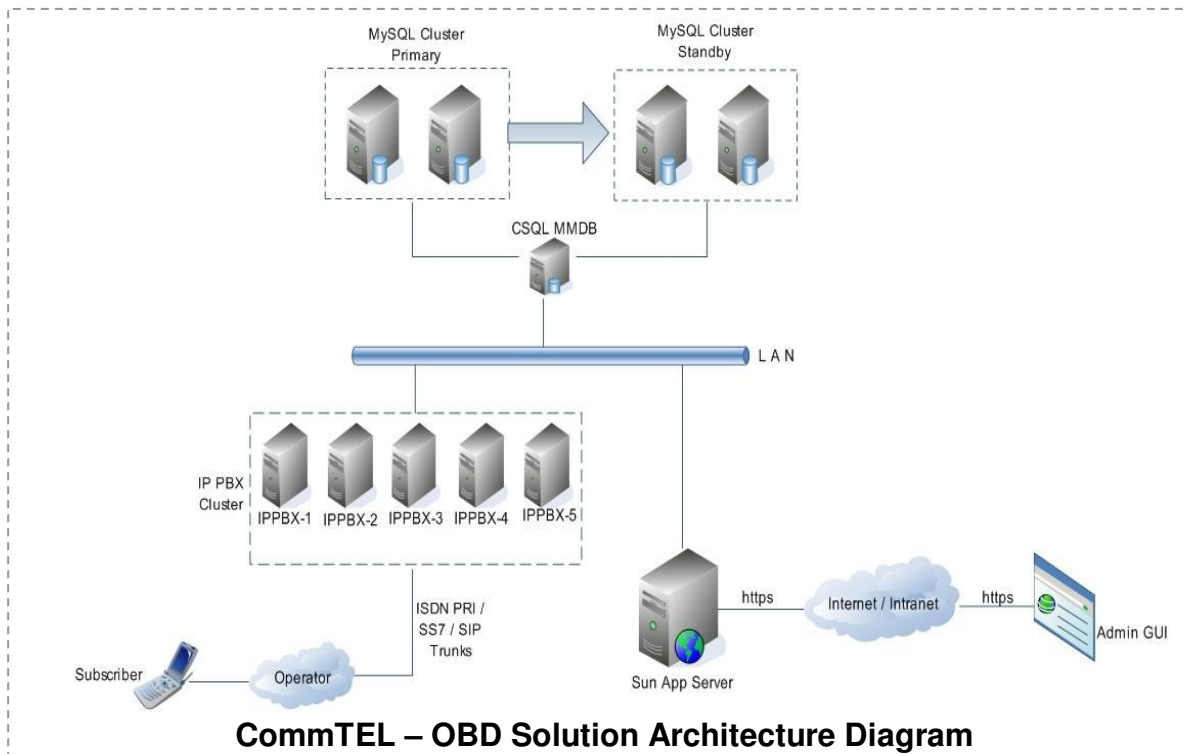
Event-based dialing – The calls are made to specific numbers based on an event – anniversaries, birthdays, national holidays, festivals, etc.

Prefix-based dialing – The system admin provides an exchange prefix, lets say 2346, the rest of the 4 digits are generated automatically and randomly and the number thus formed – 2346xxxx is then dialed out.

A.3 Current platforms

The CommTEL-OBD works on the RHES Linux platform and uses MySQL as the database. Platform requirements are discussed in later sections.

B. Architecture of CommTEL – OBD



B.1 Overview

The MySQL Cluster

This layer contains a MySQL Enterprise cluster with replication between primary cluster and a hot-standby cluster. Each of these clusters is made up of 2 servers each.

- **Campaign details** – which consists of the numbers to be dialed, the WAV file or the recorded voice message that needs to be played for that particular campaign. At this point it needs to be mentioned that the CommTEL – OBD is customizable to the extent that individual numbers can be played separate different voice messages depending on campaign requirements, which have to be pre-configured.
- **Response details** – which contain the response being generated by each call. The response depends on the status of the call, example – unanswered call, call disconnected, not reachable, switched off, number busy. Depending on the response type the OBD system decides whether to retry the call or send an SMS with the same message.
- **Retry details** – consisting of the numbers to be re-called, number of retries to be attempted.

CSQL (MMDB)

The CSQL main memory database caches the records from the MySQL database to improve the throughput. The CSQL database just improves the fetch rate by a factor of 20-30.

The Ethernet Network

The internal switched network is assumed to support Quality of Service (QOS) and the core backbone of the clustered servers will leverage a 100MBPS Ethernet fabric.

The IP PBX Cluster

The IP PBX cluster consists of 5 individual IP PBX servers in a load-balanced architecture or each individual IP PBX could be dedicated for a particular telecom circle. In other words the same architecture could be used to optimize performance of the OBD solution either by distributing the dialing load between the servers or by diverting calls for a particular telecom circle to the IP PBX server reserved for that circle.

The IP PBX is based on an Asterisk platform, which is the world's leading Open Source soft switch. A detailed breakdown of the IP PBX components is provided in the next section.

The IP PBX makes the outbound calls using the depicted ISDN PRI, SS7 lines or SIP trunk.

An indicative figure about the capacity of this IP PBX cluster could be referred from the table below

Specification	Volume
Number of ISDN PRI / SS7 Lines per IP PBX	12
SIP Trunk	1-5
Quad span PRI cards	3
Ports per IP PBX	360
Ports for the 5 Box IP PBX Cluster	1800
Number of simultaneous outbound calls	1800
Assuming a call duration of 30 seconds	3600 calls per minute
Number of Outbound Calls for an 8 hour campaign shift	1728000 ~ = 1.72 million calls per day

The Telephony Network

This is the operator's telecom backbone, which will provide the requisite ISDN PRI /ss#7 / SIP trunk for the solution. Each PRI line will provide 30 voice ('B') channels at 64kbit/s that will carry the outbound calls. If a SIP trunk is available, it can be used also.

The Web Server

The CommTEL – OBD provides the capability of remote administration using dedicated and secure web services and access via HTTPS links. The remote admin module is hosted on a Sun Application Server v 9.0 or Sun GlassFish Web Server Enterprise v3.0.

The module is equipped with an Admin Console that can be accessed using any standard browser like FF 2.00 or IE 6.0 or above.

The Admin Console allows for crucial configurations like

- Defining campaign details, campaign Voice files, campaign lists
- Defining re-try rules
- Defining the IP PBX cluster behavior – to be load balanced based on call load or on the basis of telecom circles.
- Reporting

Pentaho Business Intelligent engine

The Pentaho business engine is integrated to provide various business input on fly. It provides query, reporting, dashboard and interactive analysis.

The Internet / Intranet connectivity

For remote administration of the CommTEL – OBD solution, it will utilize a HTTP over Secure Socket Layer (SSL) to establish connectivity between the administrator's browser and the admin web service hosted on the Sun App Server

The Admin GUI

This is the admin console for the CommTEL – OBD system. It is based on AJAX framework, thereby allowing refresh-free content updation on the pages. This is hugely beneficial both in terms of user-friendliness and efficiency as well as in improving performance.

Scalability

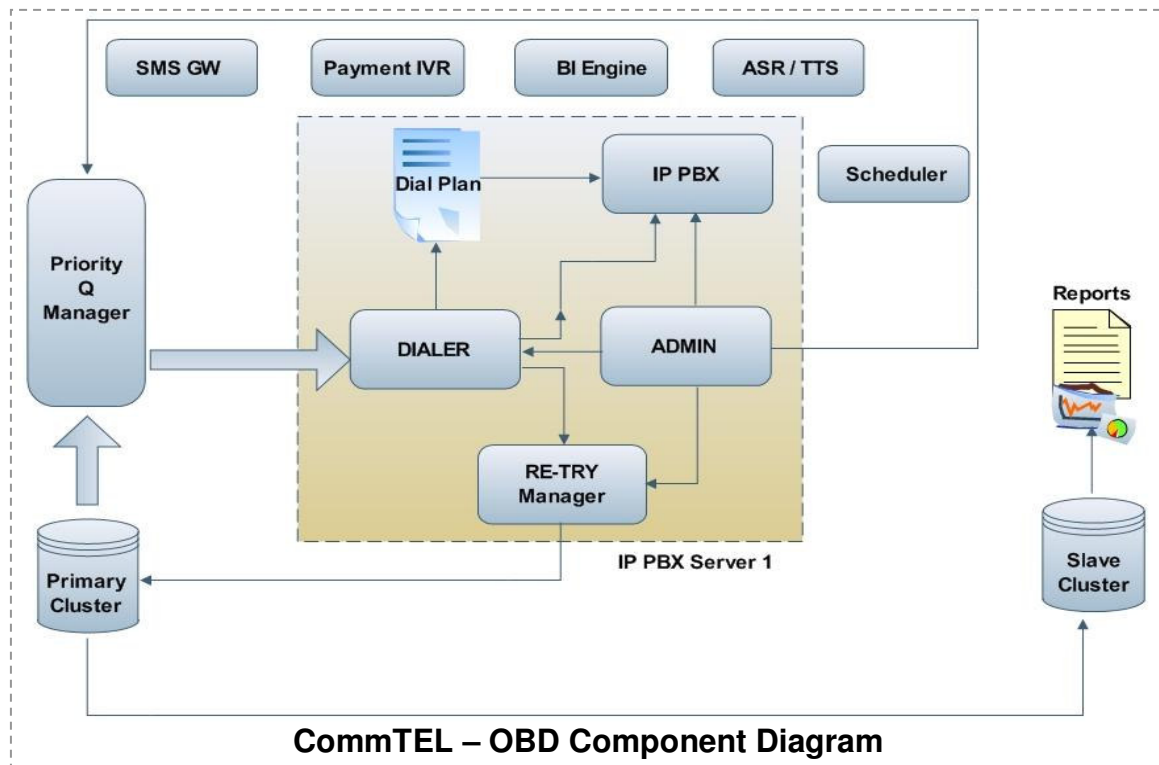
MySQL cluster is highly scalable to support millions of transactions.

More IP PBX boxes can be added with PriorityQ Manager/Dialer pair to increase the throughput.

Availability

MySQL cluster provide a single point failure. If one of the IP/PBX fails, the load is automatically shifted to the other IP/PBX boxes.

B.2 Component layout



Primary Cluster – this is the primary MySQL Cluster which is basically the data source for the CommTEL OB and supplies the critical campaign information like – campaign lists, campaign message, call details and responses.

The components listed hereunder are common each individual IP PBX

Priority Q Manager – This acts as a cache for the Dialer component, thereby helping in improving the overall throughput of the OB by reducing disk IO that would have been high in case the Dialer accessed the MySQL clusters. It also has the intelligence to queue based on the priority.

Dialer – This is the core component of the IP PBX box, in the sense that the outbound call is dialed by this component. It picks up the number from the Priority Q Manager and plays the pre-recorded WAV file for that number. A dialer can be configured for a Q Manager/IP PBX pair.

Dial plan – this defines the dialing rules containing the number patterns, area codes, country codes or any other prefix or suffix that has to be added to the number to be dialed. It also defines a small call flow for receiving the responses in case of tele-voting kind of application.

C. Sample Implementation Scenario

Scenario -1

- **Message** – *“Namaskar Mr Arindam, Happy Mall me aaj har item pe 50% ki choot!!! Adidas shoes par 20% off!!! 500 rupaye ki kharidari par 500GM chini FREE!!! To aaj aap aa rahen hain na? Agar aapka jaawab haan hai to EK dabaye varna DO dabaye.” (TTS to speak the name)*
- **Reaction** – Customer might press 1 or 2, does not make a difference. Either way both win as the message has hit home. The customer wins because he knows about the discounts, which he might have missed if did not see your hoarding or AD. You win because your campaign has reached the customer.
- **Call disposition 1** – If customer presses 1
- **Call disposition 2** – If the customer presses 2, just a THANKS would do.
- **Call status** – The response of the customer – accept, declined, disconnected, failed can be recorded in the database for future references / reporting.

Scenario –2

- **Message** – *“Namaskar Mrs Pooja Mehera, App aaj khane me kya banayenge 1114 ko dial kijiye or banayiye har roj naya khana app agar subscribe karna chahaten hein to ek dabayiye*
- **Reaction** – Customer might press 1, Mrs Mehera is subscribed to the service.

- **Call disposition 1** – If customer presses 1
- **Call disposition 2** – If the customer presses 2, just a THANKS would do.
- **Call status** – The response of the customer – accept, declined, disconnected, failed can be recorded in the database for future references / reporting.

Scenario -3

- **Message** – *Good morning MR Pradhan, Your bill amount for the post paid account is Rs 2000.00 if you want pay now press 1*
- **Reaction** – Customer Press 1. The IVR tells please keep your credit card /debit card ready , if you need some time press 1 , Plays a song and prompt again and then transfers the call to the Payment IVR. Payment is deducted, the customer gets a confirmed sms and the payment is updated.

D System requirements

The CommTEL platform is a one of kind CTI system which has the simplest possible hardware and software requirements. The requirements for the CommTEL-OB is mentioned as below –

IP PBX Server Requirement	
Processor	Intel Dual Core Xeon Processor
Memory	4 GB
OS	RHES (Linux)

MySQL Cluster Server Requirement	
Processor	Intel dual Core Xeon Processor
Memory	84GB
OS	RHES (Linux)

Telephony requirements	
Connectivity	ISDN PRI line (E1 line) – 30 channels
Card	PRI Quad-span card (e.g. TE420)

Software requirements	
OS	RHES Linux
Database	MySQL Enterprise edition

E Contact Information

For more information about the CommTEL Outbound Dialer, please contact us at the details mentioned below.

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