WEB TELEPHONY SERVICES
BASED ON FREESWITCH AND PLIVO

MOOC4D
massive open online courses
for development

MOOC on M4D 2013
PART I

INTRODUCTION TO WEB TELEPHONY SERVICES
PART III

SETTING UP THE WEB TELEPHONY SERVER
Topics Covered

• Server Preparation
• Installing Freeswitch
  - Working
  - Connectivity
  - Dialplan
• Installing Plivo
  - Working
  - Call Handling
• Installing Drupal
Server Hardware

• Minimum System Requirement
  – 1 GHz Processor
  – 512 MB RAM
  – 1 GB Hard-disk
  – PCI or PCI Express Slot
Server Preparation

• Install Operating System
  – Linux
    ➢ DEBIAN
    ➢ CENTOS

• Install XAMPP
  – Webserver (Apache)
  – Database (MySQL)

• Install Sangoma Hardware in PCI slot
✓ Sangoma Hardware
✓ Operating System
✓ XAMPP

Freeswitch
Plivo
Drupal
Freeswitch Installation

• Installation Guidelines
  – Manually
  – Shell Script
    ➢ [http://docs.plivo.org/get-started/](http://docs.plivo.org/get-started/)

• Customization
  – Enable FreeTDM module
    ➢ Edit ‘modules.conf’ file in Freeswitch
  – Re-Compile
  – Enable the modules for autoload
    ➢ Edit ‘modules.conf.xml’
  – Edit Dialplan
Working of Freeswitch

- Freeswitch is a Daemon
- Connects to communication services using a set of modular channel drivers

Sofia FreeTDM

- Connects soft phones using SIP protocol
- Connects PSTN phones ISDN protocol
Connectivity

- Soft Phones
- PSTN Devices
Connectivity

Internet

PRI Line

PSTN

RJ 45

PCI Slot

freeswitch

Sofia module

FreeTDM module

Dialplan
Routing

SIP end point

Plivo Server

PSTN phone
The Dialplan

```xml
<?xml version="1.0" encoding="utf-8"?>

<include>
  <context name="default">
    <extension name="web_to_PSTN">
      <condition field="destination_number"
        expression="^([0-9]*[0-9])$">
        <!-- <condition field="destination_number" expression="^\(.*\)$" -->
        <action application="export" data="dialed_extension=$1"/>
        <action application="answer"/>
        <action application="bridge" data="freetdm/1/a/${dialed_extension}"/>
        <action application="hangup"/>
      </condition>
    </extension>
    <extension name="plivo_sip_uri">
      <condition field="destination_number"
        expression="^\(.*\)$">
        <action application="enable_heartbeat" data="60"/>
        <action application="socket" data="127.0.0.1:8084 async full"/>
      </condition>
    </extension>
  </context>
</include>
```

Plivo Installation

• Installation Guidelines
  – Shell Script
    ➢ http://docs.plivo.org/get-started/

• Customization
  – Edit “default.conf” file
    ➢ Direct an incoming call to Web-Telephony application
    ➢ Enter credentials for authentication
Working of Plivo

• Answers the call diverted by Freeswitch

• Handles the call as per the instructions written in Web-Telephony application

• Web-Telephony application makes use of Plivo’s special XML tags
  - [http://docs.plivo.org/docs/restxml/](http://docs.plivo.org/docs/restxml/)
Call Handling

- Inbound Call (Plivo as client)

  ![Diagram]

  - Incoming Call
  - HTTP req to App
  - Plivo Server
  - Freeswitch Dialplan
  - Our Server
  - Application
  - Mr X
Call Handling

• Outbound Call (Plivo as server)
  – Outbound call is made through a RESTAPI request
  – Since it is a request from our application, Plivo acts as Server here

– Once the call gets answered, Plivo requests application for instructions to handle the outbound conversation.
Drupal Installation

• Installation Guidelines
  - Download the source code from https://drupal.org/start
  - Create a new database in MySQL
  - Point the address of source code in a browser
  - Follow instructions

• Customization
  - Install requisite additional modules
  - Modify the user registration form
Thankyou