



# WEB TELEPHONY SERVICES BASED ON FREESWITCH AND PLIVO

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# PART I

# INTRODUCTION TO WEB TELEPHONY SERVICES

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**PART II**

**ARCHITECTURE**

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## PART III

# SETTING UP THE WEB TELEPHONY SERVER

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# Topics Covered

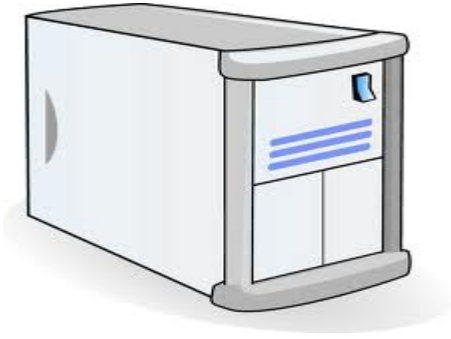
- Server Preparation
- Installing Freeswitch
  - Working
  - Connectivity
  - Dialplan
- Installing Plivo
  - Working
  - Call Handling
- Installing Drupal

# Server Hardware

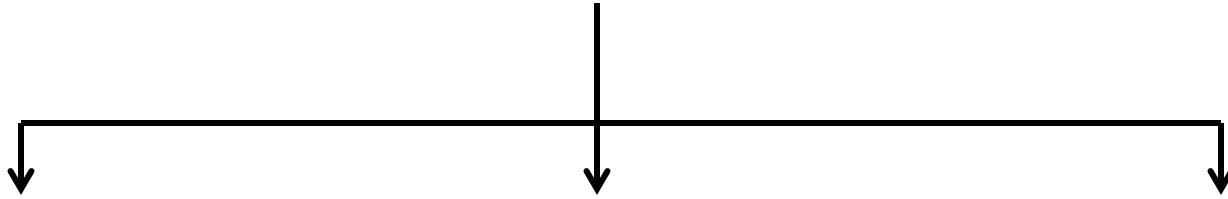
- Minimum System Requirement
  - 1 GHz Processor
  - 512 MB RAM
  - 1 GB Hard-disk
  - PCI or PCI Express Slot

# 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**

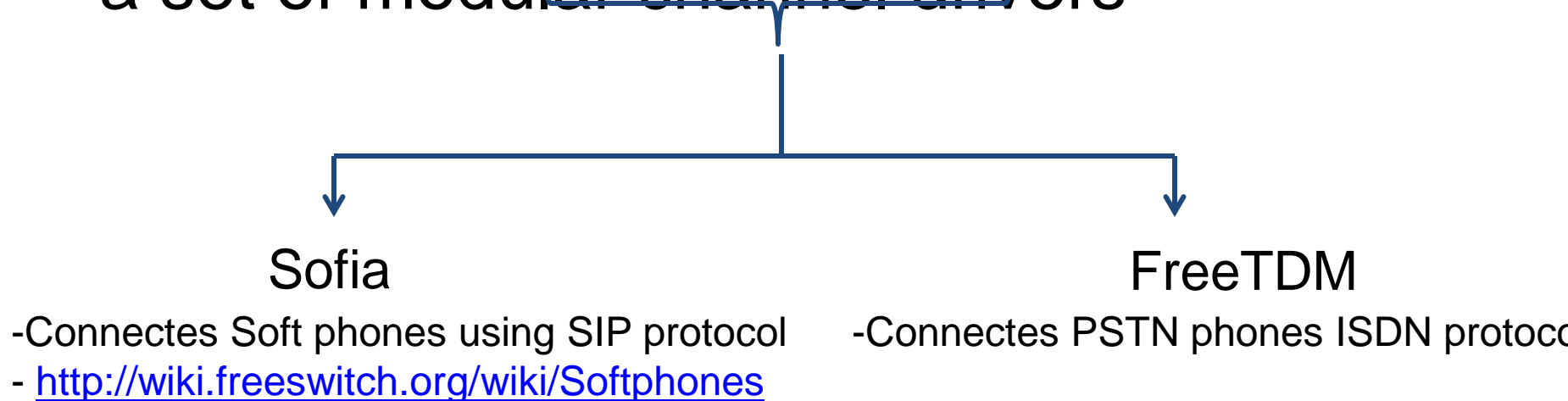


# Freeswitch Installation

- Installation Guidelines
  - Manually
    - [http://wiki.freeswitch.org/wiki/Installation\\_Guide](http://wiki.freeswitch.org/wiki/Installation_Guide)
  - Shell Script
    - <http://docs.plivo.org/get-started/>
- Customization
  - Enable FreeTDM module
    - Edit 'modules.conf' file in Freeswitch
    - <http://wiki.freeswitch.org/wiki/FreeTDM>
  - 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



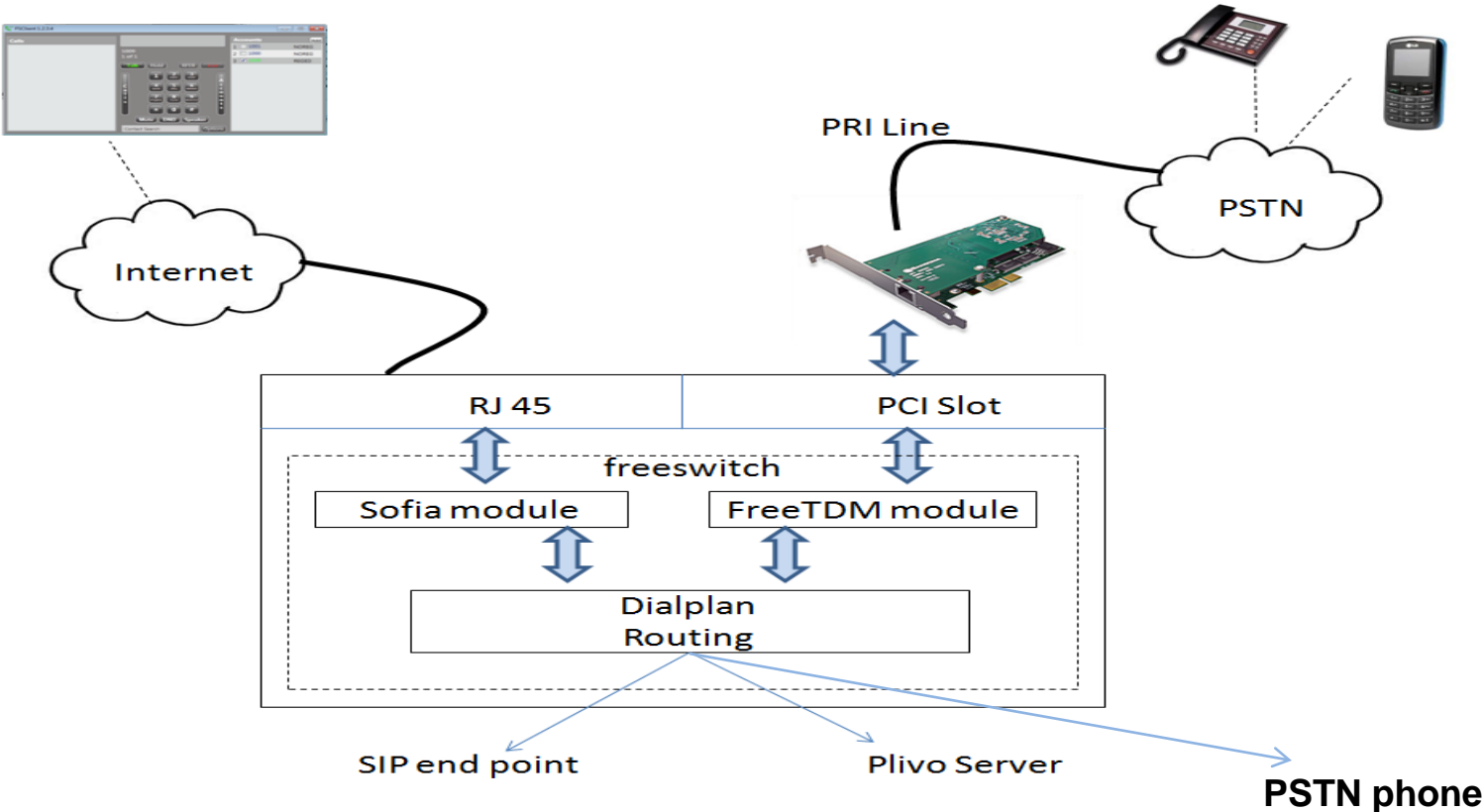
# Connectivity



Soft Phones

PSTN Devices

# Connectivity



# The Dialplan

```
<?xml version="1.0" encoding="utf-8"?>
<include>
  <context name="default">

    <extension name="web_to_PSTN">
      <condition field="destination_number"
        expression="^([0][7-9][0-9][0-9][0-9][0-9][0-9][0-9][0-9][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/>

# Call Handling

- Inbound Call (Plivo as client)



Incoming Call →

← HTTP req to App

Freeswitch Dialplan

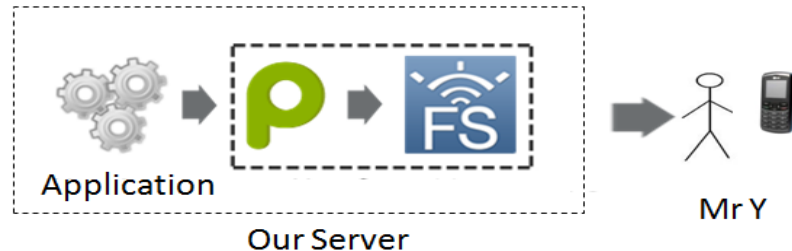


Plivo Server



# 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

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