

Customized Class 5 Softswitch Solution

A customized class 5 softswitch developed for Telecom service provider from Italy.

Convergenze S.P.A., Italy

Convergenze S.P.A is a joint stock company in Southern Italy. The company has been operating in the telecommunication sector since 2005. Since then, the company has been one of the leaders in Italy for providing innovative and customizable services in telecommunication industry, which can satisfy the requirements of any customer or organization. The company offers services related to Voice, internet and Data.

The Situation

Convergenze S.P.A. was in the startup phase back in 2008. The company was offering the broadband services to its customer and they wanted to start a whole new range of services with the usage of VoIP (Voice over IP) along with their existing services. They were enthusiastic to start retail VoIP services, including calling and faxing. To start the desired VoIP retail services, the company had already completed the first step by getting license from the respective regulatory of Italy. The company had also bought TDM based Class 4 Softswitch to be integrated with Telecom Italia for PSTN Interconnection. They were seeking for assistance in developing a class 5 Softswitch, which can be integrated in their existing environment so they can start offering the retail VoIP services. Also, they wanted to start the services as soon as possible, which may fit in their budget so they intended to use the available open source tools and platform in class 5 Softswitch development so the development timeframe can be decreased.

Solution Provided by Ecosmob



Our **Business Development Manager** and Business Analyst performed thorough research of their need and made a roadmap for the development team.



Our **Project Manager** segmented the roadmap in an actual action plan, which development team can follow and ensure that the solution can be delivered in stipulated timeframe.



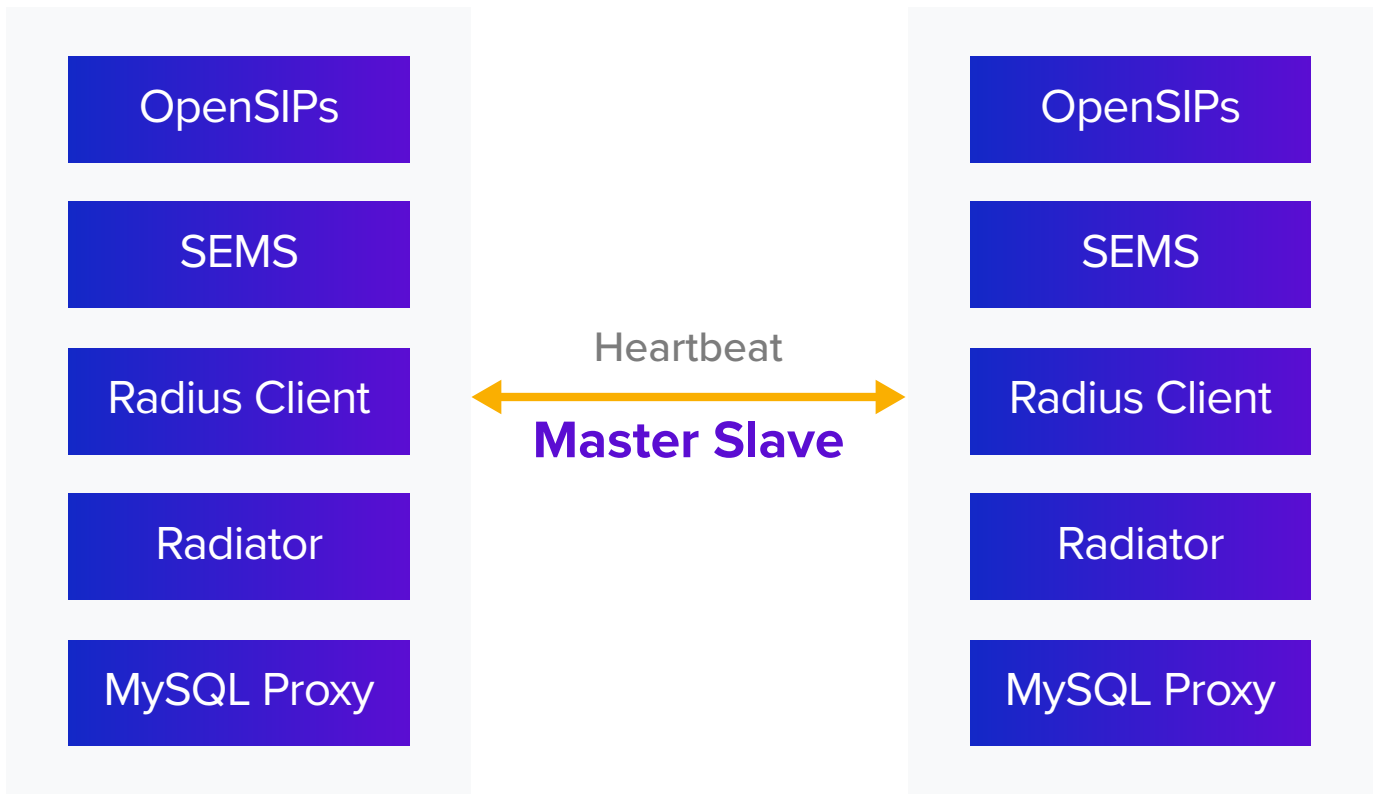
Our **Designer and PHP development team** developed an easy to use front end for the customer so they can manage the whole system using this GUI panel.



Our **VoIP experts** used iterative model of development for this project. As per the initial suggestion of a client, our team tried to use maximum possible open source platforms and tools. Our team also developed a few applications and modules to add functionality which were not available in the open source applications. Our VoIP experts made sure to add all the features required by the client in the Class 5 Softswitch.

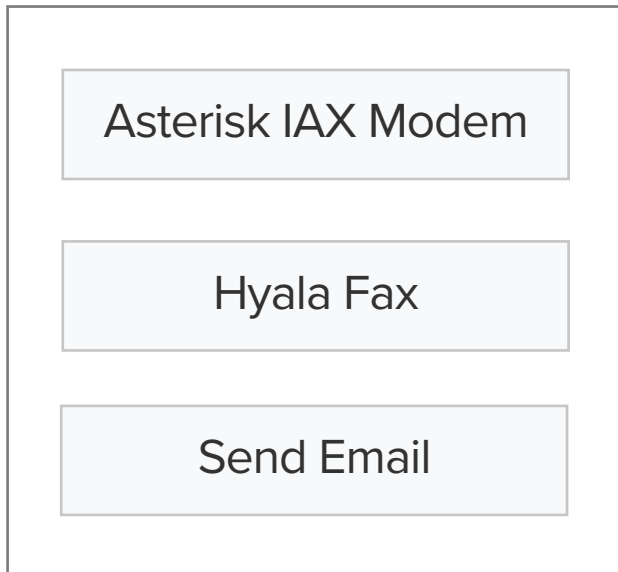


Class5 Sqwitch >> Server Architecture

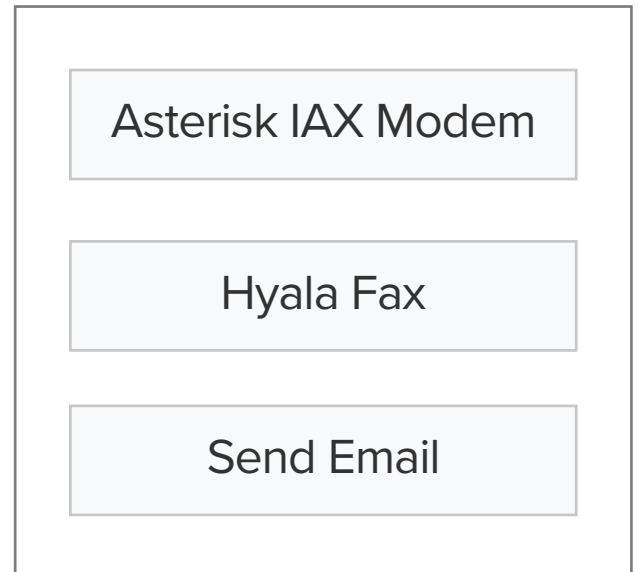


System Flow

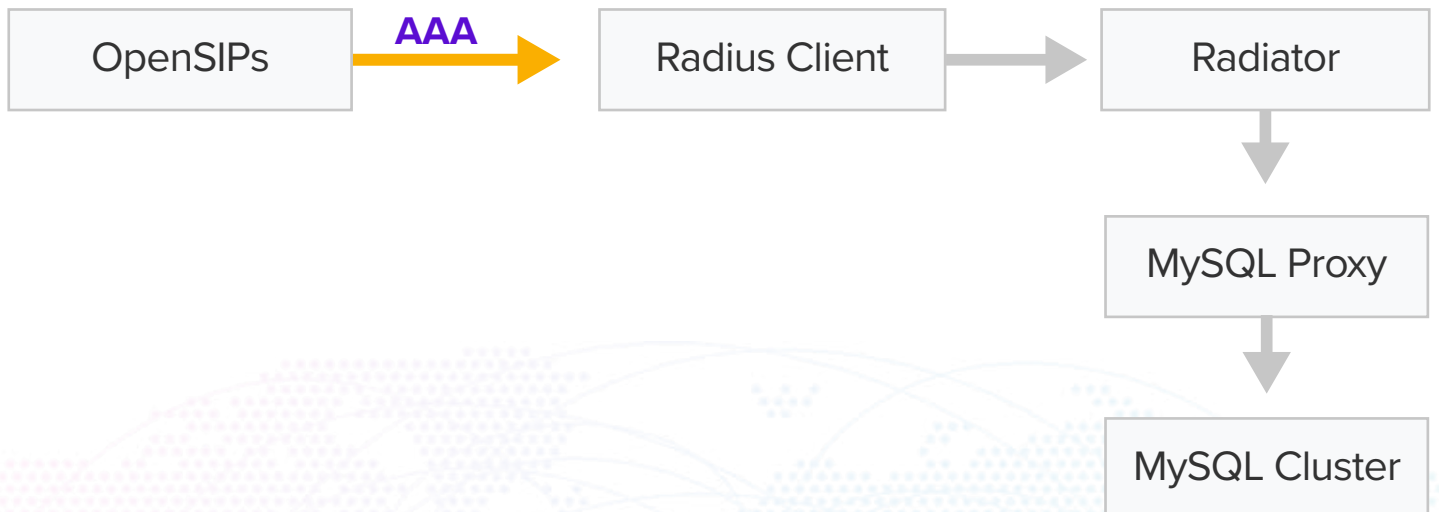
Email to Fax



Fax to Email



MySQL Cluster



Key features of delivered solution are listed below:

- 1 SIP Account for each end user
- 2 Support for Users Behind NAT
- 3 SIP Registration
- 4 Call Flow
- 5 End to End media when Caller and Callee on Public Static IP
- 6 DID Number as a SIP Account Username
- 7 Support for Ported In DID Numbers and set as DID Alias to SIP Account
- 8 Voicemail Box Per SIP Account
- 9 Voicemail to Email
- 10 Enable / Disable (Voicemail)
- 11 Call Forwarding
- 12 Hide Caller ID
- 13 Caller ID Overriding



- 14 Early Media Notification
- 15 Authorization, Authentication and Accounting using Radius
- 16 Fax to Email Service
- 17 Email to Fax Service
- 18 Lawful Call Interception
- 19 IVR
- 20 Customized OpenSIPS-CP as Control Panel to Manage the System
- 21 Setup 2 Servers using HeartBeat for Auto-Failover to have High Availability of the services
- 22 Failover and Load balancing of MySQL Connection



Tools and Technologies Used in Development:

- OpenSER
(Later on Upgraded to OpenSIPS v1.5.X)
- SIP Express Media Server (SEMS)
- Radiator (Radius Server)
- Mediaproxy
- Asterisk
- Hylafax
- IAXModem
- OpenSIPS-CP (Control Panel)
- MySQL Proxy
- MySQL NDB Cluster
- HeartBeat
- Apache Web Server



Result Obtained



A front end with easy to use admin panel to manage the whole system with simple clicks was delivered. The backend with a clean coding and a load balancing mechanism delivered to make sure that the system stays reliable and running in crisis as well.

The system used the open source tools at possible extent to ensure that the solution delivery can be done in stipulated time and can stay in client's budget.

Achievement



The client was so happy with the developed system and our services, he invited our Director and Developer on the occasion of his Commercial House inauguration.

He also made us part of the live TV interview:

<https://youtu.be/gxMkzclf3IA>

End Note

The Class 5 Softswitch developed by Ecosmob Technologies is still in use and the uptime of the system is 99.01%



sales@ecosmob.com



www.ecosmob.com



+91-7778842856



+1-604-900-8870



+1-303-997-3139

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