

WiFi Captive Portal

Project Case Study

Type	Client	Location
Web App	Govt of Kerala	Kerala

Client Overview

WiFi hotspot management software designed to track and secure a Wi-Fi Hotspot network in a centralized way. This is based on captive portal technology.

Client Need



Provide free wifi usage for people in 1km radius around village office at Kazeragode district. Features of which included authentication and authorization of internet usages and centralized network monitoring with sophisticated security provision for a large user base.

Our Offering

A web based login for authenticating clients and enable them to browse the internet

Our system will be equipped with an intelligent info box showing user's information (e.g. access minutes remaining, logout button, time left reminder)

The User needs to login once initially and all subsequent access will be automatic

Our unique technique of bandwidth throttling helps applying limits on bandwidth consumption, down to per-user level to stop network abuse, flexible bandwidth throttling mode which only enable when the total upload or download bandwidth utilization has reached a certain limit.

The solution offers a range of hotspot controllers allowing service providers to maintain as much control as desired over the usage of the hotspot while deploying cost effective and scalable networks.



Features

Session Timeout	The user will be prompted to log in again when no action is performed during an interval
User Limitation	The number of users can be restricted based on usage
IP Filters	By using an IP filtering service you can allow or block your visitors/ their access to particular websites
Radius Server auto shutdown & restart	When not in usage, the server can be auto shutdown
Threat word detection	Threat words searches will be stored in a database

MAC Blocking	This act of blocking particular websites can be useful if you want to restrict members from accessing certain offensive or inappropriate websites
	Commercial Radius server software with time and traffic enforcement
	Bandwidth Management and volume & time limiting
	Usage reports and statistics
	Remote management of radius server and access point gateway

Technology Used

Captive Portal	Radius server	Front End	Server Side	Backend
Coovachilli	Radius Desk	HTML5 CSS3 Javascript Jquery	PHP	MySQL

Challenges Faced

→ WiFi Range

Unable to specify the range of wifi because of geographic area and structure

Solution



Positioning the router and repeaters such that the signal does not interfere with any structure or foliage.

→ **User Authentication**

Solution

Implemented an OTP based system wherein the user details like phone number, name were collected and stored. This was done in a user friendly way enabling the users for immediate usage of the system

→ **Illegitimate usage**

Usage of banned sites and content

Solution

Implemented IP whitelisting and threat word detection to analyse the user behaviour and prohibit illegal usage of the network

Impact on Client Business

Around 1000 users per day access this system daily

The village office became one of the first in India to have implemented free wifi to its residents



