MAC Filtering in R-Pis - Design

INTRODUCTION

MAC addresses are uniquely assigned to each card, so using MAC filtering on a network permits and denies network access to specific devices through the use of **blacklists** and **white-lists**. While the restriction of network access through the use of lists is straightforward, an individual person is not identified by a MAC address, rather a device only, so an authorized person will need to have a white-list entry for each device that he or she would use to access the network.

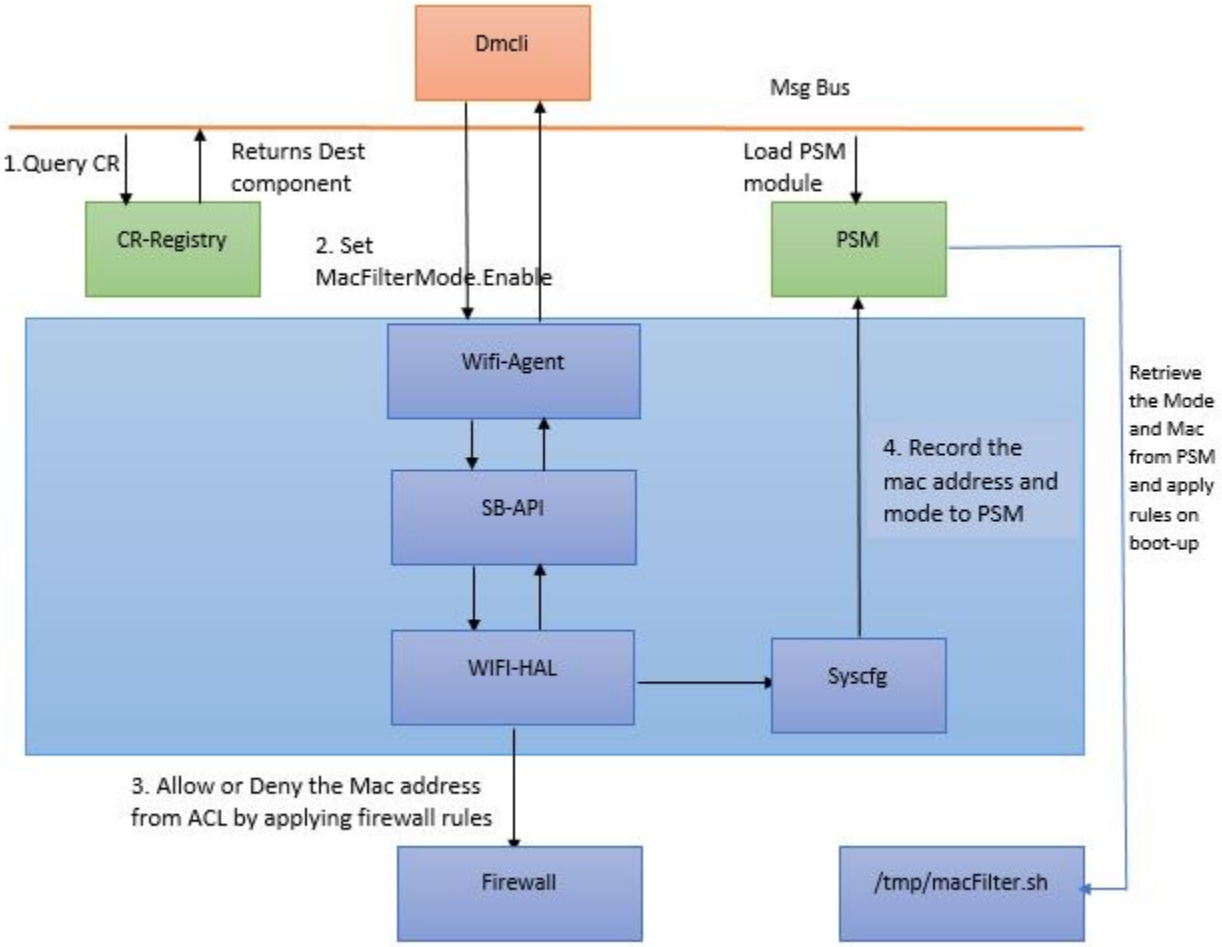
Mac Filtering mode falls on the following

- **Allow** – Allow only those mac addreses in the list(ACL)
- **Deny** – Will not connect to the Mac address in the list(ACL)
- **Allow-all** – No mac filtering rules applied

TR-181 Data Model Parameter of Remote Management

Module	Data Model Params
Ccsp-Wifiagent	1. `dmcli eRT setv Device.WiFi.AccessPoint.1.X_CISCO_COM_MACFilter.Enable` 2. `dmcli eRT setv Device.WiFi.AccessPoint.1.X_CISCO_COM_MACFilter.FilterAsBlackList` 3. `dmcli eRT setv Device.WiFi.AccessPoint.1.X_CISCO_COM_MacFilterTable.1.MACAddress` 4. `dmcli eRT setv Device.WiFi.AccessPoint.1.X_CISCO_COM_MacFilterTable.1.DeviceName`

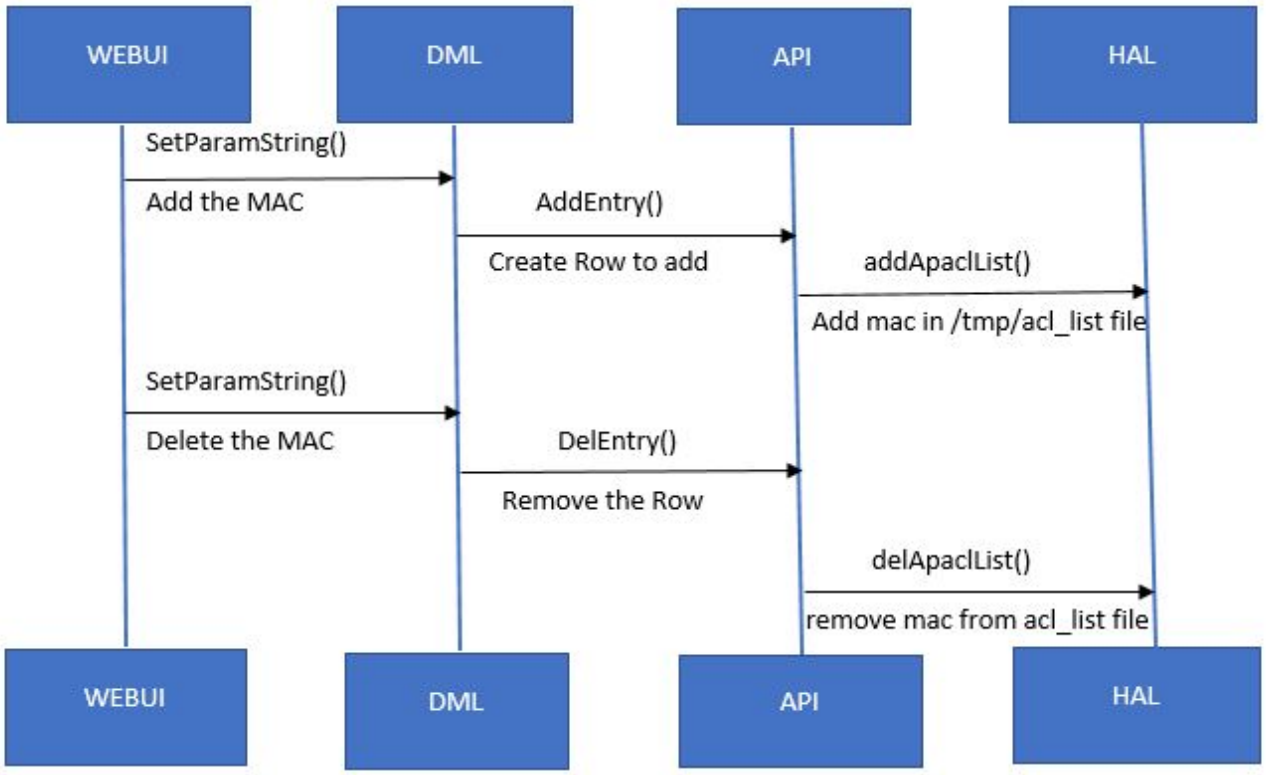
Parameter Work Flow



Mac Address are entered via **WEBUI** or **dmcli** and stored in ACL(Access Control List) . When the MacFilter mode is set **TRUE** , it involves either white-list or black-list depends on **FilterAsBlackList** value, and applying the iptable rules on mac's in ACL. Also record the FilterMode and mac addresses into PSM (Persistent Storage Manager) by syscfg. Retrieves the FilterMode and Mac on boot-up from PSM , rules are applied by executing the macfilter.sh.

Sequence Diagram

1) Adding MAC address into ACL



2) Applying rules on MAC in ACL list