

WiFi Channel Optimization

WiFi Channel Optimization feature in AVSystem's UMP Cloud brings a new innovative solution that lets you **easily and automatically manage and optimize WiFi for all your devices**. WiFi Channel Optimization assesses the quality of currently used WiFi channels, checks for other available channels and picks the best one for a specific device. The feature can be run on a chosen group of devices and thanks to the special algorithm it is able to proactively assign the current best WiFi channels to all devices in the group.

WiFi Channel Optimization performs certain calculations to find the optimal WiFi channel to connect to. These calculations are based on **3 variables formula**:

1. The number of devices which are using the same WiFi channel at the same time.
2. A device's signal strength.
3. The number of devices using other neighbouring WiFi channels.

The feature itself is a 3-step procedure. WiFi Channel Optimization executes all 3 steps taking the above formula into account.

WiFi Channel Optimization in 3 steps

Step 1

Assessing the quality of currently used WiFi channel, assigning a rank to each channel, and marking devices that use a channel which received a relatively low rank.

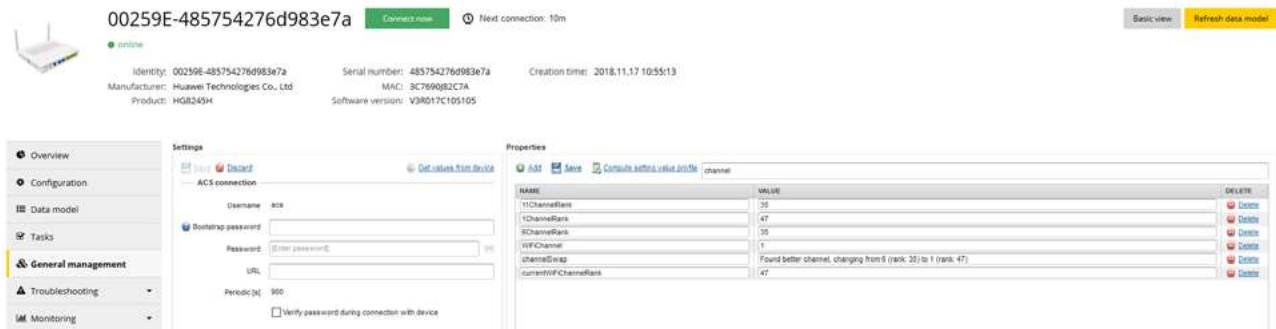
Step 2

Checking the quality of other WiFi channels available from your regulatory domain per every device.

Step 3

Changing the channel to the one with the highest score from 1 to 100 which has been calculated by performing **Step 1 and Step 2**.

Example results:



The screenshot displays the management interface for a device with ID 00259E-485754276d983e7a. The interface is divided into several sections:

- Device Information:** Shows identity, manufacturer (Huawei Technologies Co., Ltd), product (HGR245H), serial number, MAC, software version, and creation time.
- Settings:** Includes sections for ACS connection, Bootstrap password, and Periodic (set to 900).
- Properties:** A table showing channel optimization results. The table has columns for NAME, VALUE, and DELETE.

NAME	VALUE	DELETE
1ChannelRank	35	Delete
1ChannelRank	47	Delete
1ChannelRank	33	Delete
WiFiChannel	1	Delete
ChannelSwap	Found better channel, changing from 8 (rank: 33) to 1 (rank: 47)	Delete
currentWiFiChannelRank	47	Delete

On top of that, WiFi Channel Optimization can mark WiFi channels that have a value lower than 50 (or other value that you can set) and thus prevent overlapping. Such devices are then placed in a dedicated group for further troubleshooting to find the cause of faulty connectivity. Using WiFi Channel Optimization, you can generate valuable reports, which can be scheduled periodically, stored in the system or sent to your support team via e-mail. **Reports and statistics made available thanks to the WiFi Channel Optimization feature include:**

- A list of devices that are currently having problems with overlapping channels
- Reports with the changes which were performed automatically
- A list of devices that are potentially in danger due to their channel reaching a score (e.g. 50) that qualifies them for troubleshooting

Benefits

- **Fully customizable**
 - You can control which regulatory domain your devices should be using & on which device group you would like the process to be applied
 - You can change the threshold that indicates which device should be considered a problematic one
- Ability to perform operations on the **group of devices** (unlike Wi-Fi Scan feature)
- Automatic adaptation to changing environment & continuous data optimization
- **Higher Customer satisfaction** resulting in around 30% decrease in Customer Care calls related to WiFi problems