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MANAGEMENT OF WIRELESS TECHNOLOGY WITH CAPsMAN

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ABSTRACT: In summary, the CAPsMAN concept involves using your existing internet router (must be a MikroTik of course) and adding the optional CAPsMAN package. Then installing theCAPsMAN package on the AP devices. Conventional AP's become CAPs and the router serves as the CAPsMAN controller and you are off to the races. Each CAP becomes simply an interface on the router. An interface you can bridge, address, route, whatever, treat it like any other interface.

KEYWORDS: CAPsMAN, route, controller, connecting, wifi, wireless, system, installing.

INTRODUCTION

The first step is to configure the capsman controller before connecting access points to it. To do this, be sure to delete the default configuration of the device. It definitely needs to be done. Many times I've been asked to help set up capsman when everything looks right at first glance, but the dots don't connect to the controller. Each time the problem was solved by a complete reset of all settings, deleting the default configuration and setting from scratch. I'm so used to doing it that I've always done it. It was easier for me to clean and configure everything from scratch in 10 minutes than to figure out what the problem is there.

MATERIALS AND METHODS

Next, we update the system and make sure that we have the wireless package installed and activated.

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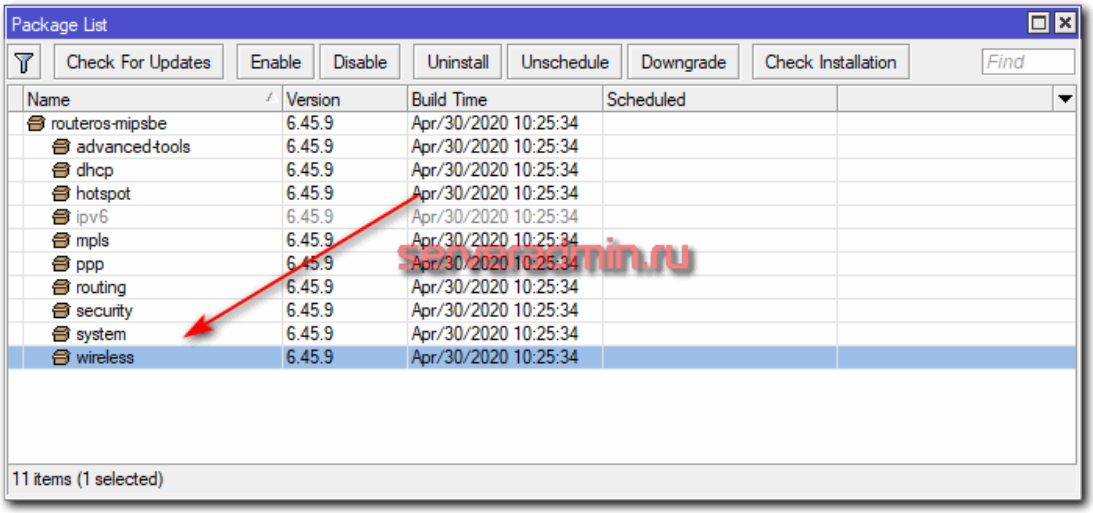
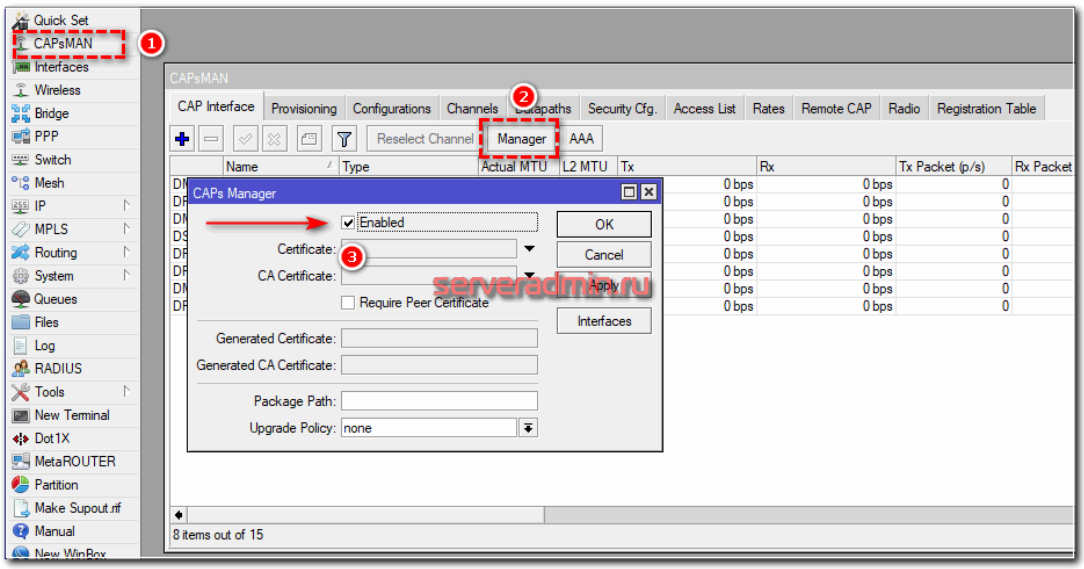


To activate the wireless network controller function, go to the CAPsMAN section , click on Manager and check the box Enabled[1].



Before proceeding with the configuration, I will tell you a little about the principle of the system. The network configures the access point management controller. Separate wifi points are connected to it and receive settings from it. Each connected access point forms a virtual wifi interface on the controller. This allows you to manage traffic on the controller using standard tools.

Sets of settings on a controller can be combined into named configurations. This allows you to flexibly manage and assign different configurations to different points. For example, you can

[1] https://serveradmin.ru/nastroyka-capsman-v-mikrotik/

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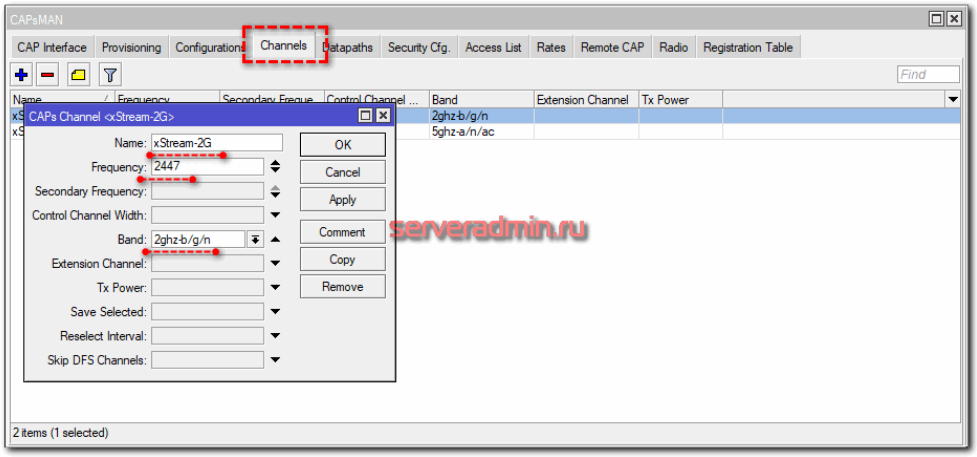
create a group with global settings for all access points, but at the same time, you can set additional settings for individual points that will override the global ones.

After the managed point connects to the network master, all local wireless settings on the client are no longer valid. They are replaced by capsman v2 settings.

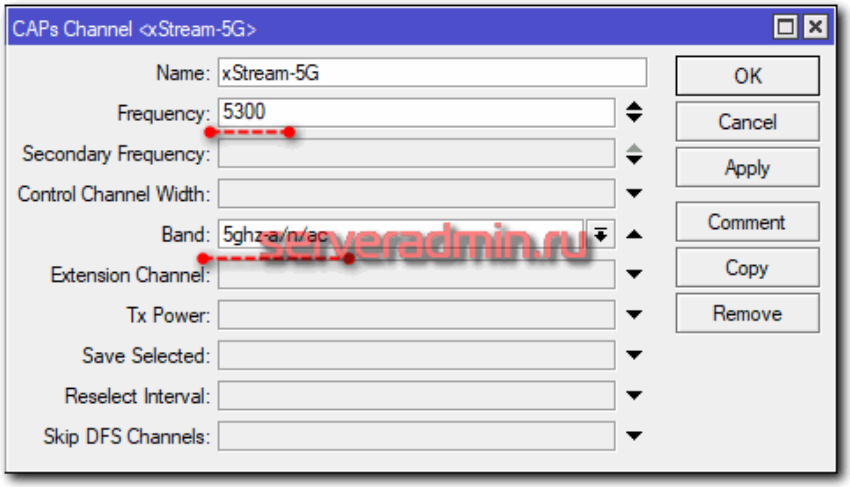
Let's continue with the controller setup. Let's create a new radio channel and specify its parameters. Go to the tab Channels , click on the plus sign and specify the parameters[2].



RESULTS AND DISCUSSION

Setting up capsman c 5 GHz (ghz)

After we figured out the basic setup, I'll tell you how to add 5 GHz interfaces to Capsman. In general, nothing special needs to be done. All settings remain the same, we only change the frequency. Go to Channel and add another channel.



[2] https://interface31.ru/tech_it/2020/10/nastroyka-kontrollera-capsman-na-mikrotik.html

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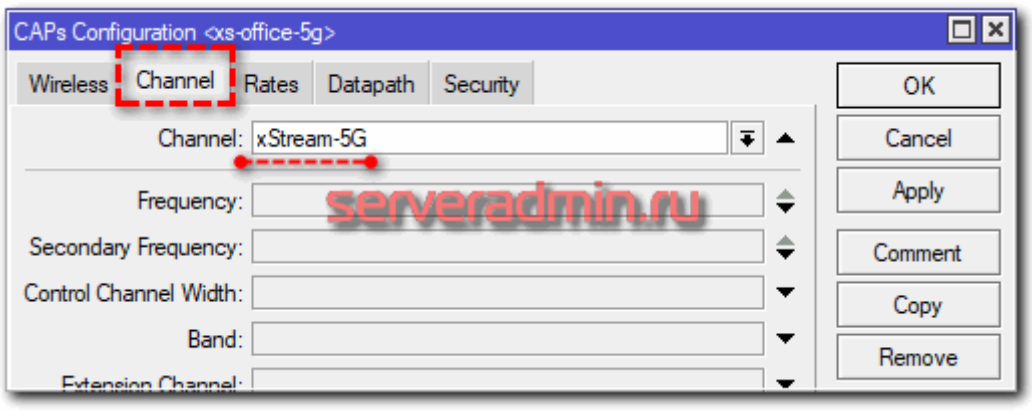
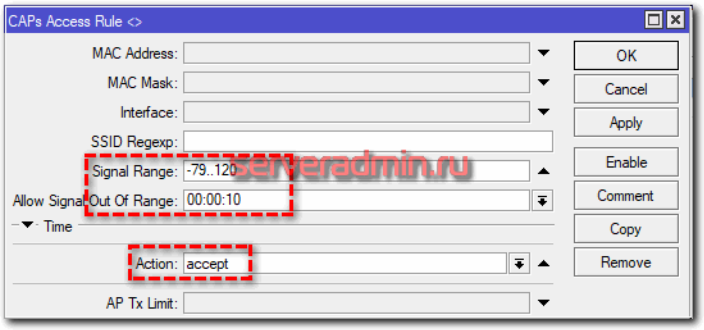
Next, in Configurations we add a new configuration for 5 GHz, where we do everything by analogy with 2.4, we just specify a different Channel. And do not forget to make a separate SSID for her.



Consider the topic of switching subscriber devices from one point to another. In general, you want to always switch to the access point with the maximum signal for this device.
Unfortunately, there is no such functionality in Capsman at all.
In the general case, the subscriber device itself determines which access point to connect to. In order to somehow manage this, you need your own roaming protocol. They exist, but in the budget segment you will not see their support on devices. All we can do in Mikrotik is forcefully disconnect the device from the access point when the signal level drops below a given threshold.
In general, this is a working option, but you need to carefully approach the setting. You must be sure that the signal level at which the disconnect occurs is guaranteed to be lower than it is in the same place from another point, so that the client immediately reconnects to another access point with a stronger signal.
We create an Access List with a signal level limit. We go to the CAPsMAN section and open the Access List tab . We add two rules.



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Possible mistakes

Based on my knowledge and experience, I will analyze the most typical errors when setting up and implementing CAPsMAN. Let me share some tips that have helped me in the past.

Big ping [3]

The thing that is most often encountered with problems with wifi is a very long packet delivery time. They check most often by ping, which is why they say that there is a very large ping and, in general, an unstable wifi connection. The most common reason for this is clogged radio. If you have a lot of noise in the operating bands of 2.4 and 5 GHz, then there is no way to get a good connection.

Turning off wifi or hotspot

Another problem that you have to deal with is that devices are disconnected from the wifi network. And most often I came across this in devices from apple. The reason for the problems of connecting iphone or ipad to mikrotik lies in the particular sleep mode of these devices. The point is this. During sleep, apple devices cannot correctly update dhcp leases when connected via wifi to Mikrotik. If the lease time is very short, like 10 minutes, they will renew the lease every 5 minutes. If at the same time they are in sleep mode, then after exiting it, there will be problems with connecting to wifi. The crutch solution to this problem is to increase the rental time, for example, up to a day.

CONCLUSION

Using the example of two wAP ac access points, we set up seamless wifi roaming on the area covered by these points. This area is easily expanded with additional wifi points of any Mikrotik model. They do not have to be the same, as is, for example, implemented in some Zyxell configurations that I have configured. The Mikrotik RB951G-2HnD points, which I still use, have approximately the same performance. The only negative is that they do not have 5 GHz. In this example, I considered almost the simplest configuration, but at the same time I painted all the settings and the principle of operation. Based on these data, it is easy to create more complex configurations. There is no fundamental complication here. If you understand how it works, then you can already work further and make your own configurations.

[3] https://настройка-микротик.укр/nastrojka-mikrotik-capsman-wifi-besshovnyj-wifi-rouming/

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