



APPLICATION NOTE

APNUS016 Connect before break Client setup procedure

March 2020 - Rev. A1

Save



Introduction

The purpose of this document is to help you configure your ACKSYS product in client mode, with the **CONNECT BEFORE BREAK** functionality. Please note that this functionality is described in the *WaveOS User's guide DTUS070*, section V.2.6.7

Wi-Fi Client configuration

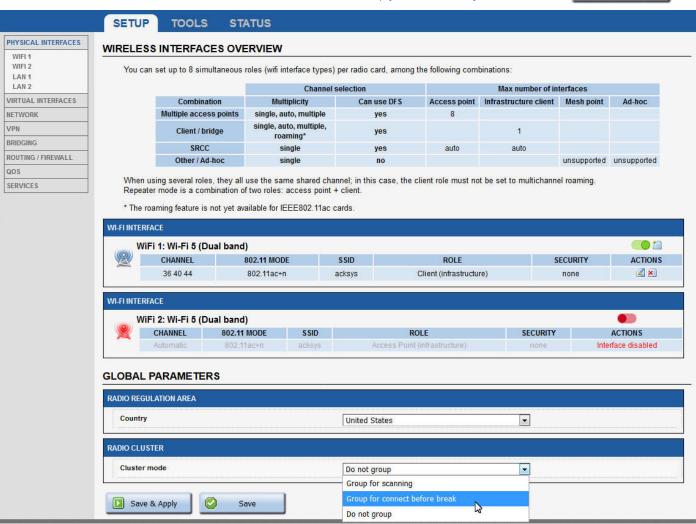
For this example, we will use the following parameters:

- Bridge client mode (no routing)
- 802.11ac using channels 36, 40 & 44
- SSID AcksysRBB
- No security
- Roaming delay between scans = 2 seconds
- Roaming leave threshold = -75 dB
- Interface Wi-Fi 1 used for data



Please note that when the Wi-Fi client is in bridge mode, the **Connect Before Break** can be used only with Acksys WaveOS products as Access points. To use Access Points from other brands, your client must be configured as a NAT router.

In SETUP/PHYSICAL INTERFACES, set the RADIO CLUSTER to Group for connect before break and





The choice of the initial primary interface has, in most cases, no effect on the operation since it's a temporary state. The WiFi 1 interface is selected by default as the primary card. This is the configuration we will use for this example.



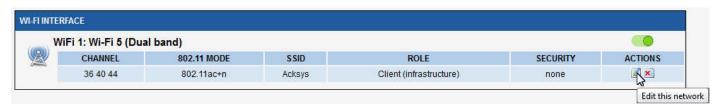
For your information, please note that you can also choose to use only one radio card for both functions. In the following example, the Connect before break client is defined only on WiFi1, and WiFi2 can be used for another purpose. Beware: this implies that you can use only one radio channel!



If your product only has one radio card, of course you have no choice: both functions, scanning and data exchange, are handled by the same radio interface, and you can scan only one channel

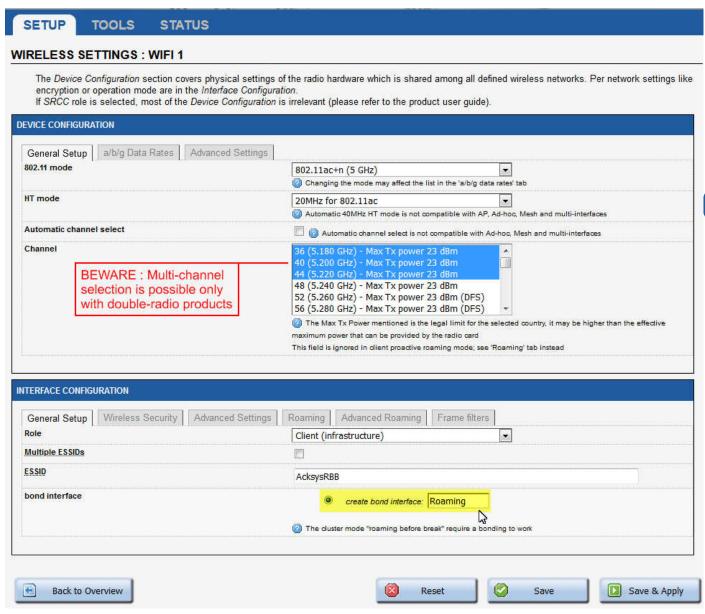


After saving this page, edit the Wi-Fi interface

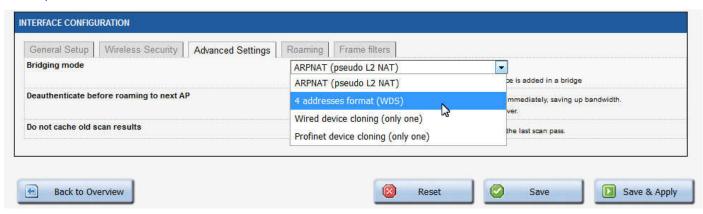




Give a name to the bond interface (here we choose Roaming), and change the Wi-Fi settings according to your needs.

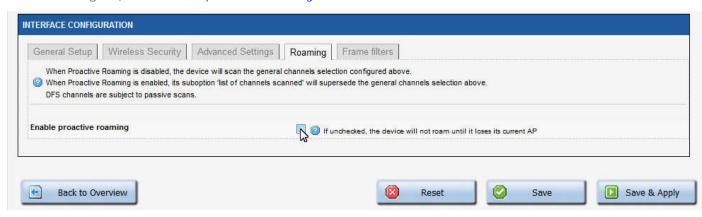


In the advanced settings, select 4 addresses format (WDS). Caution: this implies the exclusive use of WaveOS Acksys access points.





In the Roaming tab, select Enable proactive roaming



Set your roaming parameters, then Save & Apply INTERFACE CONFIGURATION General Setup | Wireless Security | Advanced Settings | Roaming | Advanced Roaming | Frame filters When Proactive Roaming is disabled, the device will scan the general channels selection configured above. 🥝 When Proactive Roaming is enabled, its suboption "list of channels scanned" will supersede the general channels selection above. DFS channels are subject to passive scans. **Enable proactive roaming** If unchecked, the device will not roam until it loses its current AP List of channels scanned for the next AP discovery 5.200 GHz **BEWARE**: Multi-channel 48 (5.240 GHz) selection is possible only 52 (5.260 GHz) (DFS) with double-radio products 56 (5.280 GHz) (DFS) If no channel is selected, the scan list is the complete list of available channels In 802.11n HT mode 40MHz, if the primary channel of the AP is not fixed, you will have to select both the primary and secondary channels Delay between two successive scan cycles 2000 Value in milliseconds, e.g. "10000". Must be greater than 0 Current AP leave threshold Value in dBm, e.g. "-60". Below (worse than) this value, the device will try to use another AP Required level boost 6 Roaming occurs only if the candidate signal level is above the current AP's plus this value Current AP scan threshold 0 Value in dBm, e.g. "-40". Above (better than) this value, the device will stop scanning. Set to 0 to scan unconditionally. Incompatible with the Maximum signal level option Minimum signal level 0 In dBm, e.g. '-75'. 0 to disable. Roaming won't occur if the candidate signal is below this level. Association is still possible if no other AP is available Back to Overview Reset Save Save & Apply

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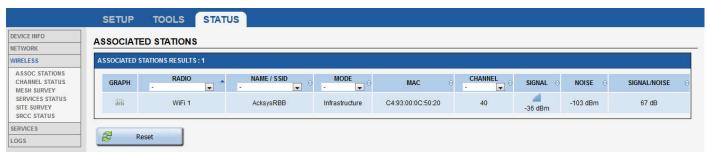


Edit your main Network (default name is LAN)



Include the *Roaming* bond interface into the bridge, then Save & Apply SETUP TOOLS **STATUS** PHYSICAL INTERFACES **NETWORK - LAN** VIRTUAL INTERFACES NETWORK On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and tick the names of several network interfaces. LAN ROAMING COMMON CONFIGURATION VPN General Setup Interfaces Settings Advanced Settings BRIDGING Bridge interfaces oreates a bridge over specified interface(s) ROUTING / FIREWALL oos Enable STP/RSTP Enables the Spanning Tree Protocol on this bridge RNING: Some cautions must be taken with wireless interfaces, please see user guide SERVICES Enable LLDP forwarding Enables the LLDP frame forwarding. bridge VLAN Enable VLAN management in bridge. You must configure the bridge VLANs before enabling this option (setup->bridging) Interface WiFi adapter: WiFi 2 - AcksysRBB (bond: Roaming) WiFi adapter: WiFi 1 - AcksysRBB (bond: Roaming) Bond virtual interface: Roaming Ethernet adapter: LAN 1 (network: lan) Ethernet adapter: LAN 2 (network: lan) MTU 1500 IP ALIASES The following applies to NATed networks which use the VRRP protocol: Public-side NAT MUST NOT define IP aliases; else the NAT might use the alias IP as public address instead of the VRRP IP . Conversely, Private-side NAT SHOULD define a private IP alias to allow connection tracking replication This section contains no values yet Add Save & Apply Reset Save

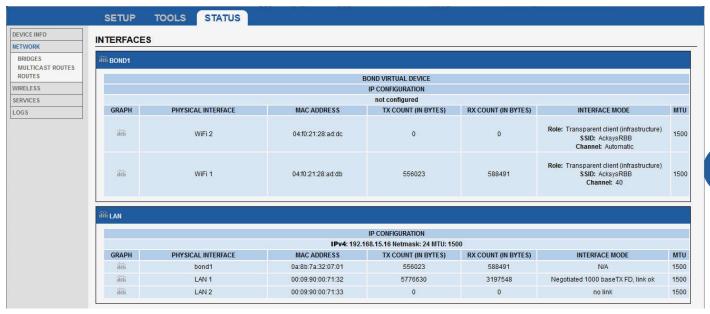
Your product is now ready for a fast and efficient roaming, without loss of packets during the handover





Troubleshooting

In the event of malfunction, first check on the STATUS/Network page that the interfaces are correctly mounted



The STATUS/WIRELESS/ASSOCIATED STATIONS and the STATUS/WIRELESS/SERVICES STATUS page will also give you invaluable information, in particular an instantaneous view of the state of the cards, to know which is active and which is passive.

Here we can see that the client hasn't found any access point: no station associated, and the two radio interfaces are in the scanning state. You can run a site survey to check for the presence of Access Points with our settings (SSID, Radio channel, Security mode...)

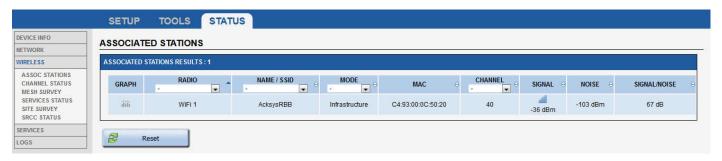


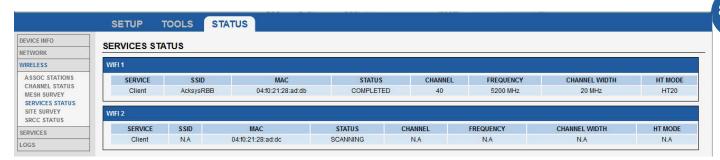






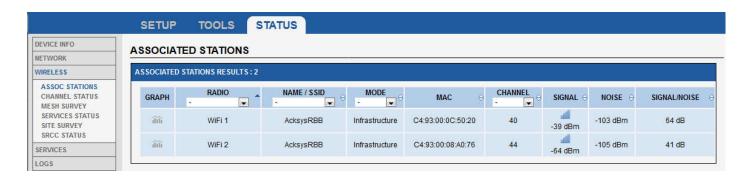
Here we can see that WiFi1 is connected to an Access Point, but WiFi2 is still scanning, looking for a second Access Point.





Here, WiFi2 has found a candidate AP and is connected.







In the event that the product does not find an access point, you can launch a site survey in order to visualize which APs are detected by the product. If no AP is detected, there may be a problem with the antennas or with the radio card. If APs are detected, check that the SSID, the frequency and the security mode match the configuration of your Client

