

# intelbras

## **Captive Portal Externo - Wifeed**

Captive Portal Externo WC

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P&D Redes Empresarias

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# 1. Sobre o teste

Realizada a homologação do captive portal externo com Wifeed utilizando WC 3000 da linha Intelbras FUTURE.

O teste teve como objetivo mapear todos os passos necessários para o funcionamento do captive portal externo junto com o roaming na controller WC 3020.

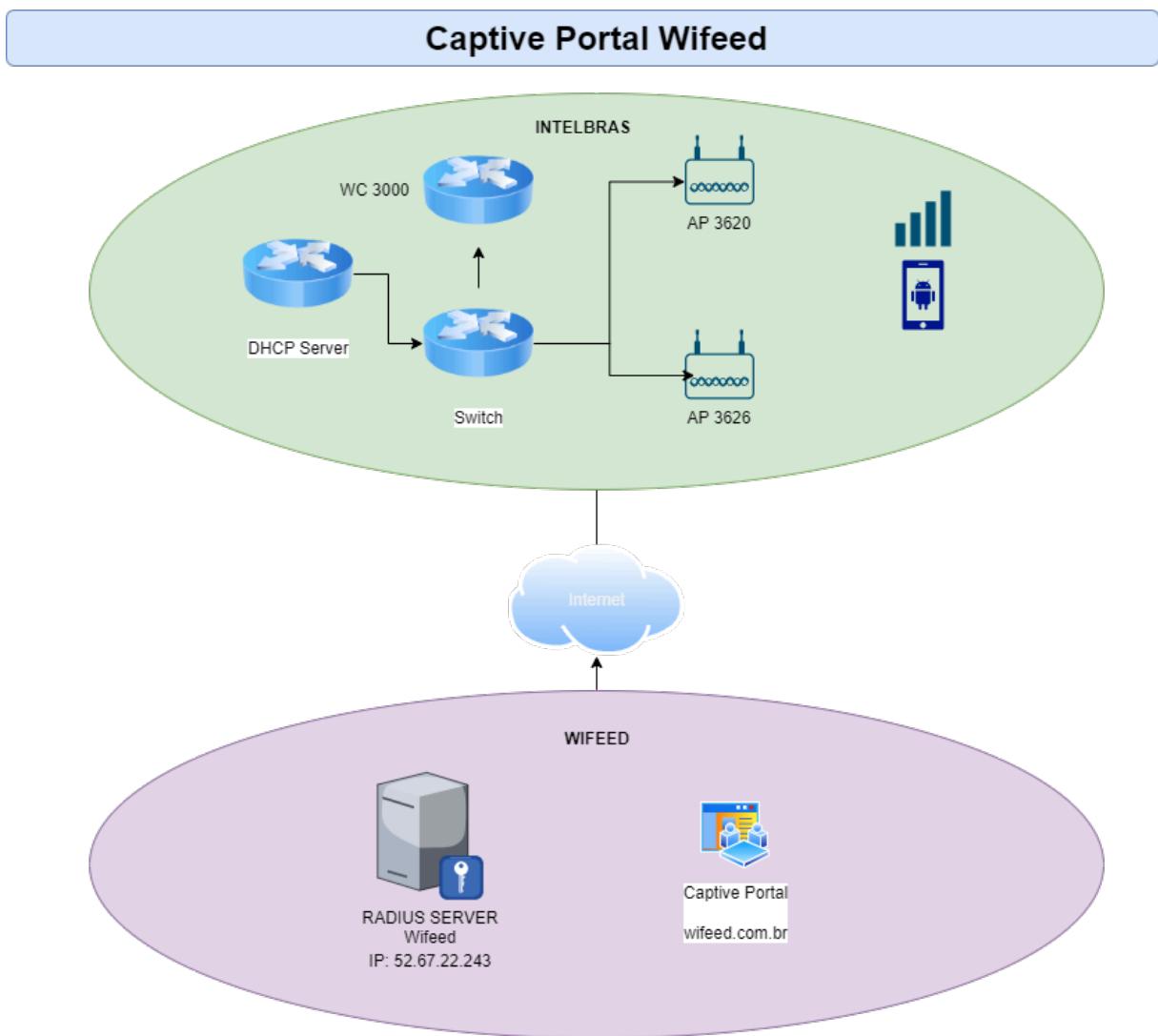
## 2. Versão Firmware utilizada

Versão de firmware e de AP utilizado nos testes:

```
1 <INTELBRAS>display version
2 INTELBRAS OS Software, Version 7.1.064, ESS 5804P57
3 Copyright (c) 2023 Intelbras S.A. All rights reserved.
4 INTELBRAS WC 3020 uptime is 0 weeks, 1 day, 6 hours, 20 minutes
5 Last reboot reason : Power on
6
7 Boot image: flash:/boot.bin
8 Boot image version: 7.1.064, ESS 5804P57
9   Compiled Apr 16 2024 16:00:00
10 System image: flash:/system.bin
11 System image version: 7.1.064, ESS 5804P57
12   Compiled Apr 16 2024 16:00:00
13
14 with 1 2200MHz Multi-core Processor
15 4096M bytes DDR4
16 7456M bytes EMMC Memory
17
18 Hardware Version is Ver.A
19 CPLD Version is 002
20 Basic Bootrom Version is 1.09
21 Extend Bootrom Version is 1.09
22 [Subslot 0]WC 3020 Hardware Version is Ver.A
23
24 <INTELBRAS>
```

## 3. Topologia utilizada

Figura 1: Image Created by The Author



## 4. Configuração Passo a Passo

Segue o passo a passo para realizar a configuração do captive portal no AP da linha FUTURE.

### 4.1. Passo a Passo - CLI

#### 4.1.1. Configuração completa CLI

Segue a configuração completa aplicada na WC 3020 via CLI com os 2 APs provisionados.

```
1 #
2 version 7.1.064, ESS 5804P57
3 #
4 sysname INTELBRAS
5 #
6 clock timezone Brazil minus 03:00:00
7 #
8 wlan global-configuration
```

```

9  firmware-upgrade disable
10 calibrate-channel self-decisive enable all
11 calibrate-power self-decisive enable all
12 #
13 dot1x authentication-method eap
14 dot1x retry 10
15 dot1x timer supp-timeout 2
16 dot1x timer tx-period 2
17 #
18 dhcp enable
19 #
20 lldp global enable
21 #
22 password-recovery enable
23 #
24 vlan 1
25 #
26 vlan 4094
27 #
28 dhcp server ip-pool 1
29   gateway-list 192.168.0.100
30   network 192.168.0.0 mask 255.255.255.0
31 #
32 dhcp server ip-pool 4094
33   gateway-list 172.16.0.1
34   network 172.16.0.0 mask 255.255.0.0
35   dns-list 1.1.1.1 8.8.8.8
36 #
37 wlan service-template 1
38   ssid Intelbras-AP
39   service-template enable
40 #
41 wlan service-template 5
42   ssid ._Intelbras_Wifeed-Rodrigoooooooo
43   portal enable method direct
44   portal domain d_wifeed
45   portal apply web-server w_wifeed
46   portal fail-permit web-server
47   portal temp-pass enable
48   service-template enable
49 #
50 interface NULL0
51 #
52 interface Vlan-interface1
53   ip address dhcp-alloc
54   dhcp client identifier mac Vlan-interface1
55 #
56 interface Vlan-interface4094
57   ip address 172.16.0.1 255.255.0.0
58   dhcp client identifier mac Vlan-interface4094
59 #
60 interface GigabitEthernet1/0/1
61   port link-mode bridge
62   port link-type trunk
63   port trunk permit vlan 1 4094
64 #

```

```

65 interface GigabitEthernet1/0/2
66   port link-mode bridge
67   port link-type trunk
68   port trunk permit vlan 1 4094
69 #
70 interface GigabitEthernet1/0/3
71   port link-mode bridge
72   port link-type trunk
73   port trunk permit vlan 1 4094
74 #
75 interface GigabitEthernet1/0/4
76   port link-mode bridge
77   port link-type trunk
78   port trunk permit vlan 1 4094
79 #
80 interface GigabitEthernet1/0/5
81   port link-mode bridge
82   port link-type trunk
83   port trunk permit vlan 1 4094
84 #
85 interface GigabitEthernet1/0/6
86   port link-mode bridge
87   port link-type trunk
88   port trunk permit vlan 1 4094
89 #
90 interface GigabitEthernet1/0/7
91   port link-mode bridge
92   port link-type trunk
93   port trunk permit vlan 1 4094
94 #
95 interface GigabitEthernet1/0/8
96   port link-mode bridge
97   port link-type trunk
98   port trunk permit vlan 1 4094
99 #
100 interface Ten-GigabitEthernet1/0/9
101   port link-mode bridge
102 #
103 interface Ten-GigabitEthernet1/0/10
104   port link-mode bridge
105 #
106 interface Smartrate-Ethernet1/0/11
107   port link-mode bridge
108 #
109 interface Smartrate-Ethernet1/0/12
110   port link-mode route
111   ip address dhcp-alloc
112   nat outbound
113   undo dhcp select server
114 #
115   scheduler logfile size 16
116 #
117 line class console
118   user-role network-admin
119 #
120 line class vty

```

```

121 user-role network-operator
122 #
123 line con 0
124 user-role network-admin
125 #
126 line vty 0 31
127 authentication-mode scheme
128 user-role network-operator
129 #
130 undo info-center logfile enable
131 info-center source STAMGR console deny
132 info-center source STAMGR logbuffer deny
133 #
134 snmp-agent
135 snmp-agent local-engineid 8000661A807C7A3C350BB0000000001
136 snmp-agent community intelbras123 user-role network-admin
137 snmp-agent sys-info version v2c v3
    snmp-agent target-host trap address udp-domain 10.100.26.141 params
    securityname intelbras123 v2c
138 #
139 ssh server enable
140 #
141 password-control enable
142 undo password-control aging enable
143 undo password-control history enable
144 password-control length 8
145 password-control composition type-number 4 type-length 1
146 password-control update-interval 0
147 password-control login idle-time 0
148 password-control complexity same-character check
149 #
150 radius scheme r_wifeed
151     primary authentication 52.67.22.243 7564
152     primary accounting 52.67.22.243 4657
        key authentication cipher $c$3$MS+NzZ3PhmKzUCVXfqv7phrHQc/Mz/
153     I2CkeyMBWxIh5rcwkTzmbh6g==
        key                               accounting                   cipher
154     $c$3$4vdeCQTpfNuVI7PxzMeI33NK2k65hhzN2NaGk2aSiXXSHK+ZFNCvJg==
155     user-name-format without-domain
156 #
157 domain d_wifeed
158     authentication portal radius-scheme r_wifeed
159     authorization portal radius-scheme r_wifeed
160     accounting portal radius-scheme r_wifeed
161 #
162 domain system
163 #
164     domain default enable system
165 #
166 role name level-0
167     description Predefined level-0 role
168 #
169 role name level-1
170     description Predefined level-1 role
171 #
172 role name level-2

```

```

174    description Predefined level-2 role
175    #
176    role name level-3
177        description Predefined level-3 role
178    #
179    role name level-4
180        description Predefined level-4 role
181    #
182    role name level-5
183        description Predefined level-5 role
184    #
185    role name level-6
186        description Predefined level-6 role
187    #
188    role name level-7
189        description Predefined level-7 role
190    #
191    role name level-8
192        description Predefined level-8 role
193    #
194    role name level-9
195        description Predefined level-9 role
196    #
197    role name level-10
198        description Predefined level-10 role
199    #
200    role name level-11
201        description Predefined level-11 role
202    #
203    role name level-12
204        description Predefined level-12 role
205    #
206    role name level-13
207        description Predefined level-13 role
208    #
209    role name level-14
210        description Predefined level-14 role
211    #
212    user-group system
213    #
214    local-user admin class manage
215        service-type ssh http https
216        authorization-attribute user-role network-admin
217    #
218        portal free-rule 0 destination ip 10.100.65.0 255.255.255.0
219        portal free-rule 1 destination ip any udp 53
220        portal free-rule 2 destination ip any tcp 53
221        portal free-rule 20091 destination ip 10.100.65.189 255.255.255.255
222    #
223    portal web-server w_wifeed
224        url https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture
225        server-detect log
226        server-type http-auth
227        url-parameter ap_ip bas-ip
228        url-parameter ap_mac ap-mac format section 6 lowercase
229        url-parameter ip source-address

```

```

230 url-parameter mac source-mac format section 6 lowercase
231 url-parameter original-url original-url
232 url-parameter ssid ssid
233 #
234 portal local-web-server http
235     login    success-url      https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
236     login    failed-url      https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
237 #
238 portal local-web-server https
239     login    success-url      https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
240     login    failed-url      https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
241 #
242 netconf soap http enable
243 netconf ssh server enable
244 #
245 ip http enable
246 ip https enable
247 #
248 wlan tcp mss 1360
249 #
250 wlan ap-group default-group
251     vlan 1
252     radio 2.4g
253     radio 5g
254 #
255 wlan virtual-ap-group default-virtualapgroup
256 #
257 wlan ap 1 model AP3620
258     serial-id 210150A2NV823CE00031
259     vlan 1
260     ap-mode fit
261     radio 1
262         radio enable
263         service-template 5
264     radio 2
265         radio enable
266         service-template 5
267     gigabitethernet 1
268 #
269 wlan ap 2 model AP5626
270     serial-id 219801A614823CP0003V
271     vlan 1
272     ap-mode fit
273     radio 1
274         max-power 1
275         radio enable
276         service-template 5
277     radio 2
278         max-power 1
279         radio enable
280         service-template 5
281     gigabitethernet 1

```

```

282 smartrate-ethernet 1
283 #
284 cloud-management server domain inccloud.intelbras.com.br
285 #
286 return

```

## 4.2. Passo a Passo - WEB

### 4.2.1. Configuração do RADIUS

Figura 2: Image Created by The Author

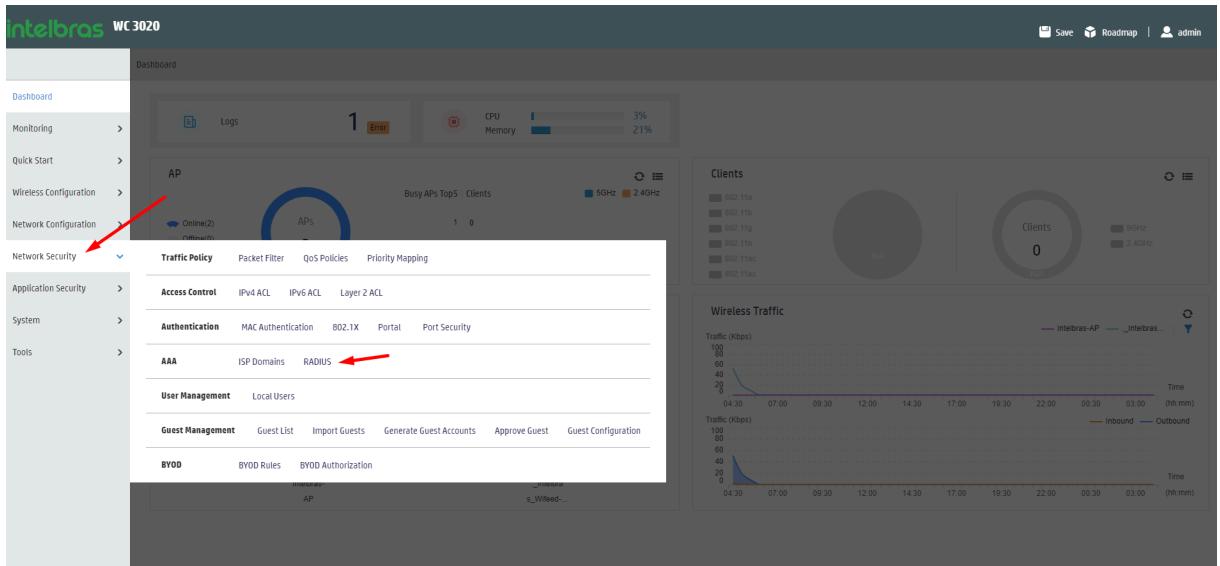


Figura 3: Image Created by The Author

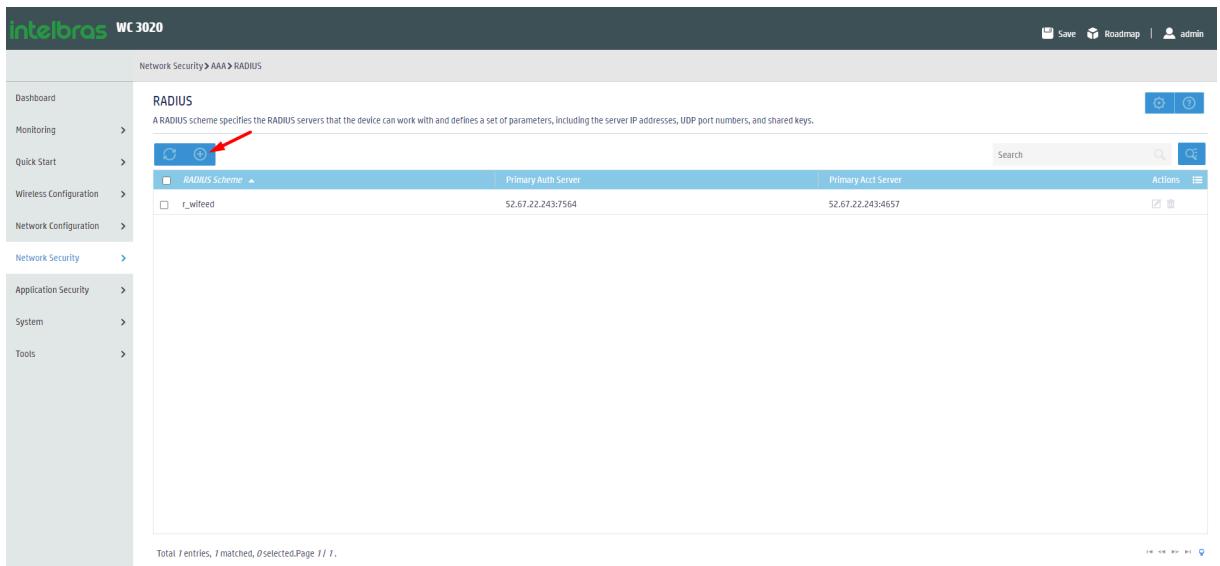


Figura 4: Image Created by The Author

The screenshot shows the 'Edit RADIUS Scheme' page. At the top, there's a 'Scheme name' input field with 't\_8wifed'. Below it, there are two tables for 'Primary authentication server' and 'Secondary authentication server', both with a single row. In the middle, there's a section for 'The shared key for accounting' with a red box around it. At the bottom are 'Save', 'Cancel', and 'Apply' buttons.

Figura 5: Image Created by The Author

This screenshot shows the same 'Edit RADIUS Scheme' page but with 'Show advanced settings' applied. The expanded configuration section is highlighted with a red box. It includes fields for 'Source IPv6 address for outgoing RADIUS packets' and various timeout and accounting parameters. At the bottom are 'Save', 'Cancel', and 'Apply' buttons.

#### 4.2.2. Configuração do domain

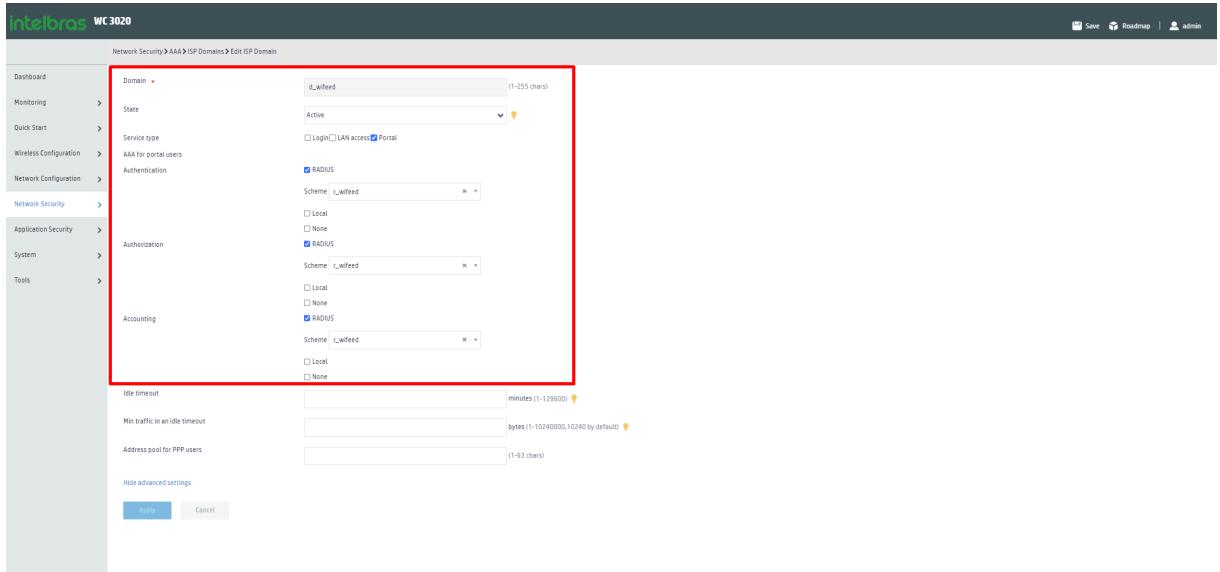
Figura 6: Image Created by The Author

The screenshot shows the Intelbras WC 3020 Network Security interface. The left sidebar has a 'Network Security' section with a dropdown. Under 'Network Security', there are links for 'Traffic Policy', 'Packet Filter', 'QoS Policies', 'Priority Mapping', 'Access Control' (with sub-links for IPv4 ACL, IPv6 ACL, and Layer 2 ACL), 'Authentication' (with sub-links for MAC Authentication, 802.1X, Portal, and Port Security), and 'AAA'. A red arrow points to the 'AAA' link. The main content area is titled 'Edit RADIUS Scheme' and shows a table for 'Secondary accounting server'. The table has one row with 'IP address' set to '52.67.22.243', 'Port' set to '4657', and 'Key' set to '\*\*\*\*\*'. The status is 'Active'. Below the table are sections for 'BYOD', 'BYOD Rules', and 'BYOD Authorization'. At the bottom are 'Save' and 'Cancel' buttons.

Figura 7: Image Created by The Author

The screenshot shows the Intelbras WC 3020 Network Security interface. The left sidebar has a 'Network Security' section with a dropdown. Under 'Network Security', there are links for 'Traffic Policy', 'Packet Filter', 'QoS Policies', 'Priority Mapping', 'Access Control' (with sub-links for IPv4 ACL, IPv6 ACL, and Layer 2 ACL), 'Authentication' (with sub-links for MAC Authentication, 802.1X, Portal, and Port Security), and 'AAA'. A red arrow points to the 'ISP Domains' link. The main content area is titled 'ISP Domain' and shows a table with two entries: 'd\_wifeed' and 'system', both in 'Active' state. There are 'Search' and 'Actions' buttons at the top right of the table. At the bottom is a message: 'Total 2 entries, 2 matched, 0 selected, Page 1 / 1.'

Figura 8: Image Created by The Author



#### 4.2.3. Portal Web Server

Figura 9: Image Created by The Author

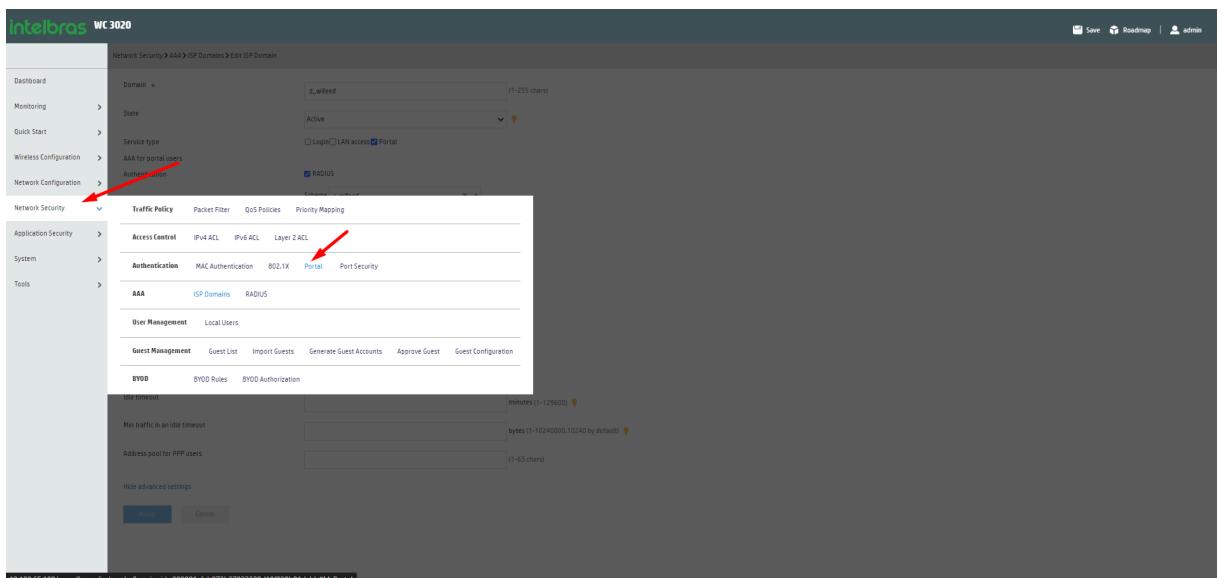


Figura 10: Image Created by The Author

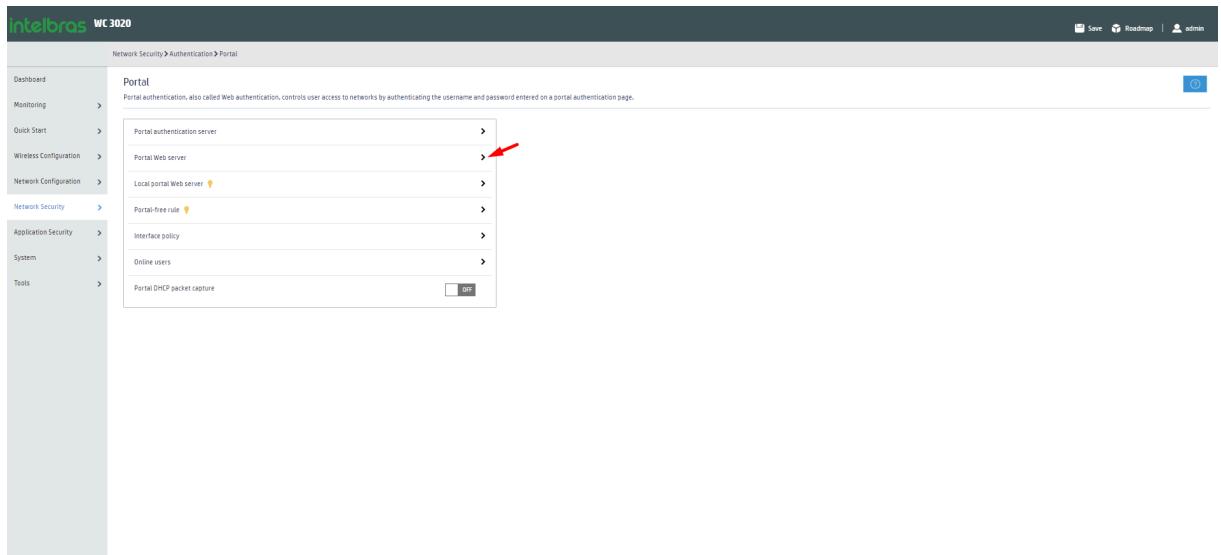


Figura 11: Image Created by The Author

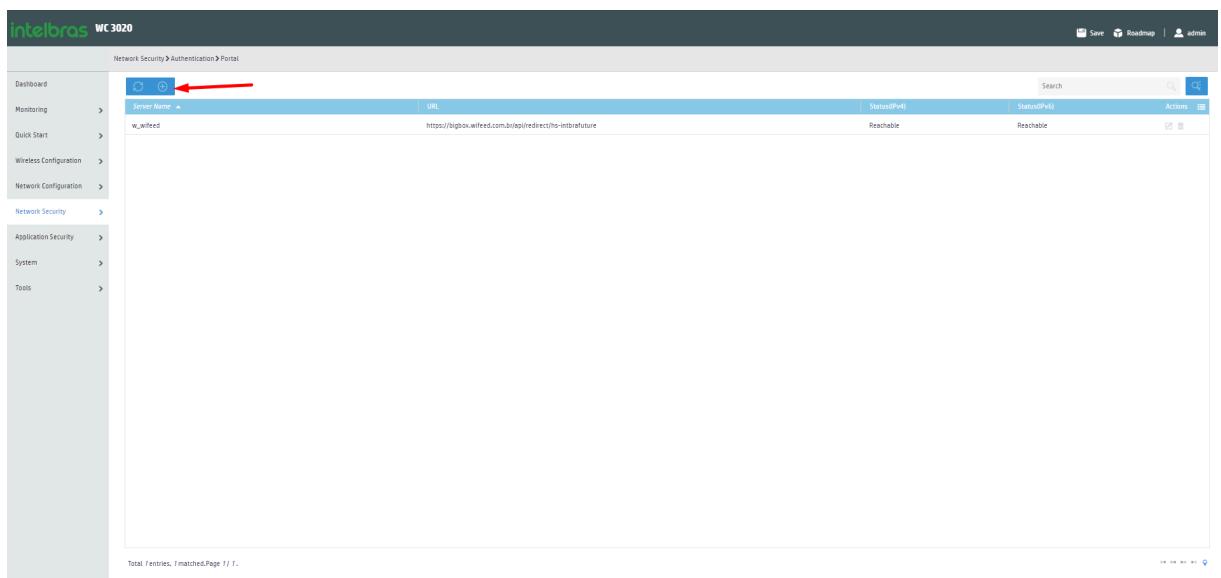


Figura 12: Image Created by The Author

Type	ParamName	Value
	ap_ip	
	ap_mac	
Source-address	ip	
Source-mac	mac	
Original-url	original-url	
	ssid	

```

1 portal web-server w_wifeed
2 url https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture
3 server-detect log
4 server-type http-auth
5 url-parameter ap_ip bas-ip
6 url-parameter ap_mac ap-mac format section 6 lowercase
7 url-parameter ip source-address
8 url-parameter mac source-mac format section 6 lowercase
9 url-parameter original-url original-url
10 url-parameter ssid ssid

```

#### 4.2.4. Service template

Figura 13: Image Created by The Author

Figura 14: Image Created by The Author

The screenshot shows the 'Wireless Configuration > Wireless Services > Wireless Services Configuration' section. The main table displays a single row for a wireless service named '5'. The columns include 'Wireless Service Name' (5), 'SSID' (\_Intelbras\_Wifeed-Rodrigo...), 'Wireless Service' (ON), 'Forwarding Type' (Centralized), 'Authentication Mode' (Portal), 'Cipher Suite' (AES-CCMP), 'Default VLAN' (1), and 'Actions'. The top navigation bar includes 'Save', 'Roadmap', and 'admin'.

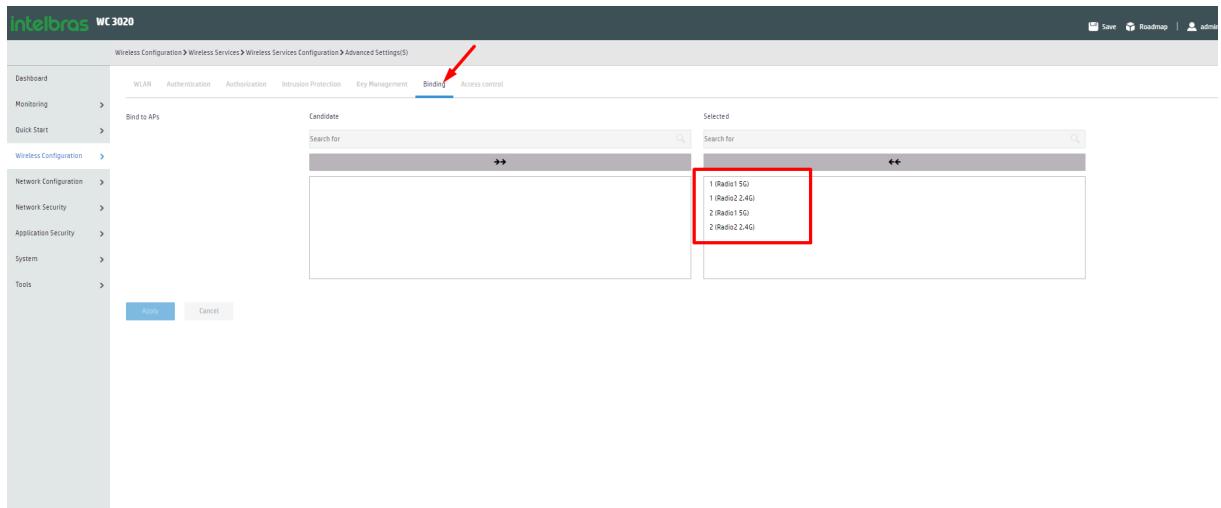
Figura 15: Image Created by The Author

This screenshot shows the 'Advanced Settings (WLAN)' configuration page. It includes fields for 'Wireless service name' (5), 'SSID' (\_Intelbras\_Wifeed-Rodrigo...), 'Description', 'Maximum clients' (1-512), 'Association location' (AC), 'Quick association' (ON), 'Fast transition' (ON), and 'AC' (ON). Other settings like 'Hide SSID', 'User Isolation', 'Forwarding type', and 'Default VLAN' (1) are also visible. The bottom of the page has 'Save' and 'Cancel' buttons.

Figura 16: Image Created by The Author

This screenshot shows the 'Advanced Settings (Authentication)' page. The 'Basic settings' section is highlighted with a red box and contains fields for 'Authentication mode' (Open (No authentication)), 'Authenticator' (AC), and 'Management Frame Protection' (ON). The 'IPv4 Portal' section is also highlighted with a red box and includes fields for 'Domain name' (d\_wifeed), 'Fail-over' (ON), 'Portal web server' (w\_wifeed), 'Maximum clients' (8192), and 'BAS-IP' (leg1.5.1.1).

Figura 17: Image Created by The Author



#### 4.2.5. Portal Local Web Server HTTP e https

Estes comandos precisam ser via CLI

```

1 portal local-web-server http
    login success-url https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
2 login failed-url https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture
3 #
4 portal local-web-server https
    login success-url https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
5 login failed-url https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture
6
7

```

#### 4.2.6. Portal Free rule

Figura 18: Image Created by The Author

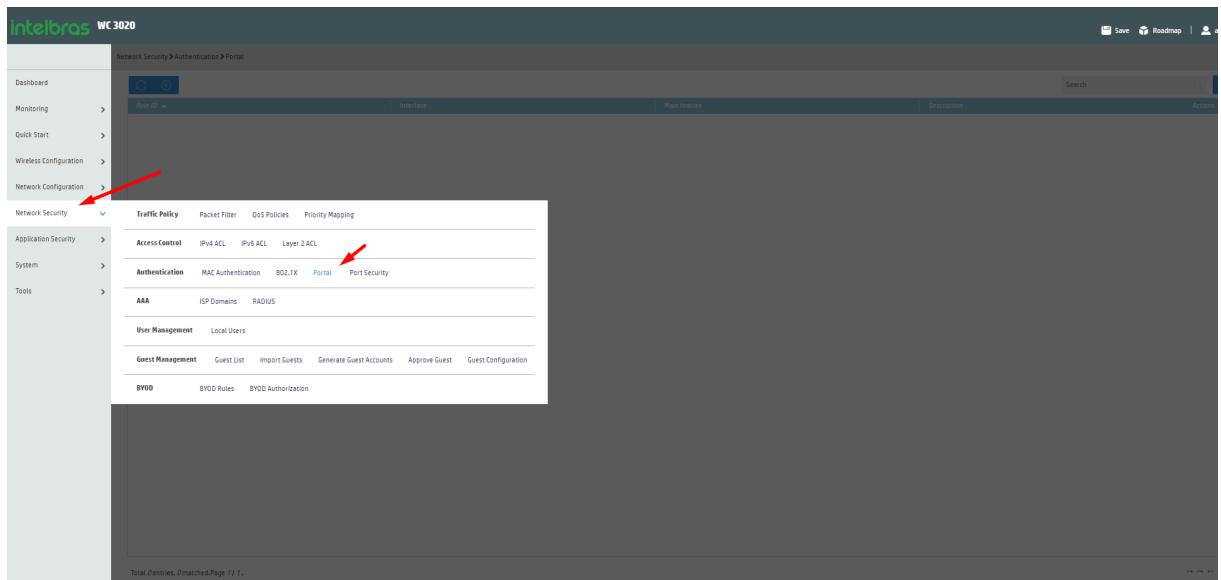


Figura 19: Image Created by The Author

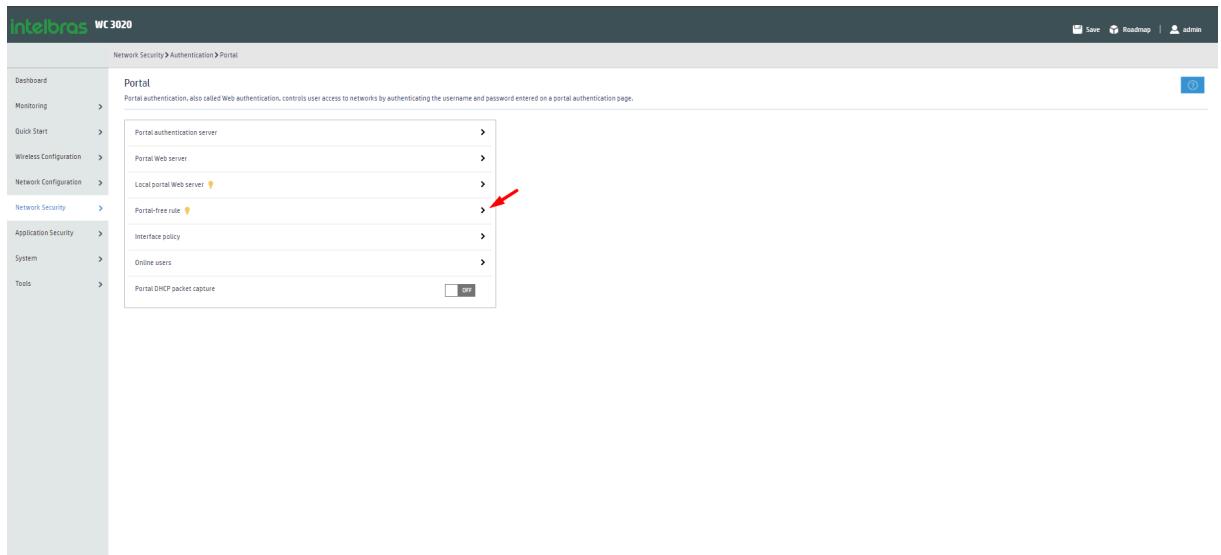


Figura 20: Image Created by The Author

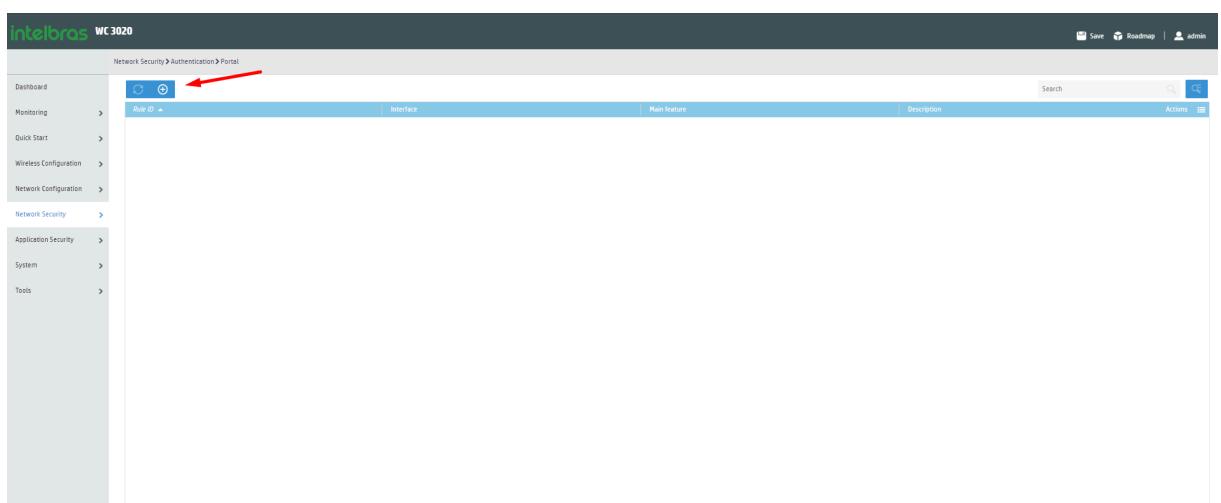


Figura 21: Image Created by The Author

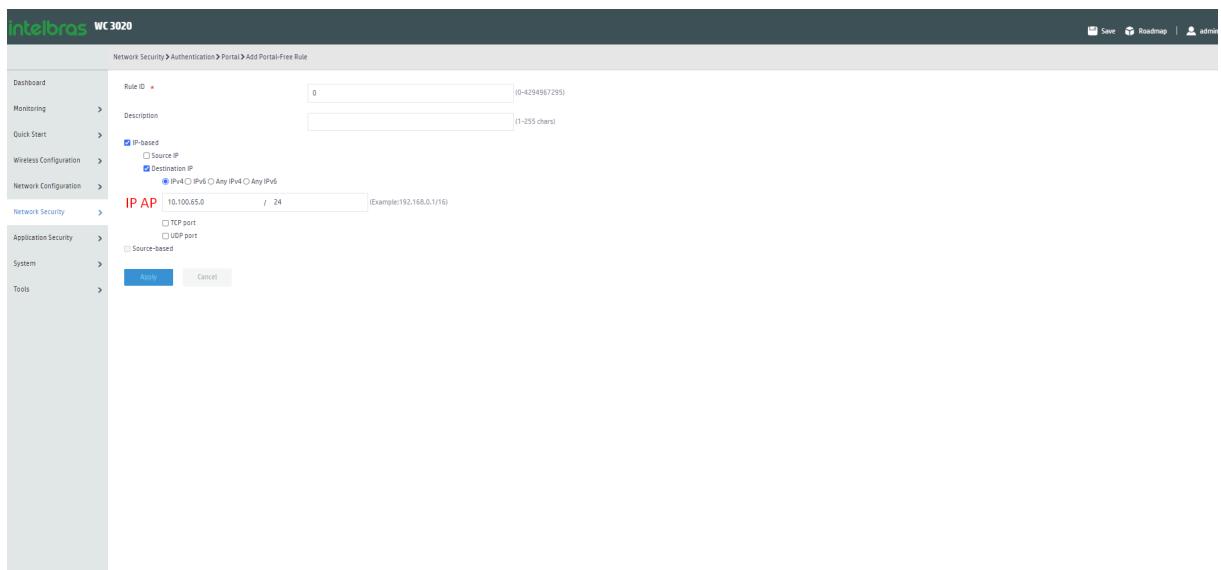


Figura 22: Image Created by The Author

The screenshot shows the 'Add Portal-Free Rule' configuration page. The 'Rule ID' field contains '(0-4294967295)'. The 'Description' field is empty. Under 'IP-based' settings, 'Destination IP' is selected, with 'Any IPv4' and 'Any IPv6' checked. The 'TCP port' checkbox is checked, and the value '53' is entered in the 'UDP port' field. The 'Source-based' checkbox is unchecked. At the bottom are 'Apply' and 'Cancel' buttons.

Figura 23: Image Created by The Author

This screenshot is identical to Figura 22, except the 'TCP port' value has been changed to '51'. All other fields and configurations remain the same.

Figura 24: Image Created by The Author

The screenshot shows the list of rules. A red box highlights the first three rows of the table. The columns are 'Rule ID', 'Interface', 'Main feature', 'Description', and 'Actions'. The highlighted rows have 'Rule ID' values of 0, 1, and 2, all with 'Interface' set to 'All' and 'Main feature' set to 'IP-based'. The 'Actions' column includes icons for edit, delete, and details.

Rule ID	Interface	Main feature	Description	Actions
0	All	IP-based		
1	All	IP-based		
2	All	IP-based		

## 4.3. Passo a Passo - INCCloud

### 4.3.1. Configuração do RADIUS e Domain

Figura 25: Image Created by The Author

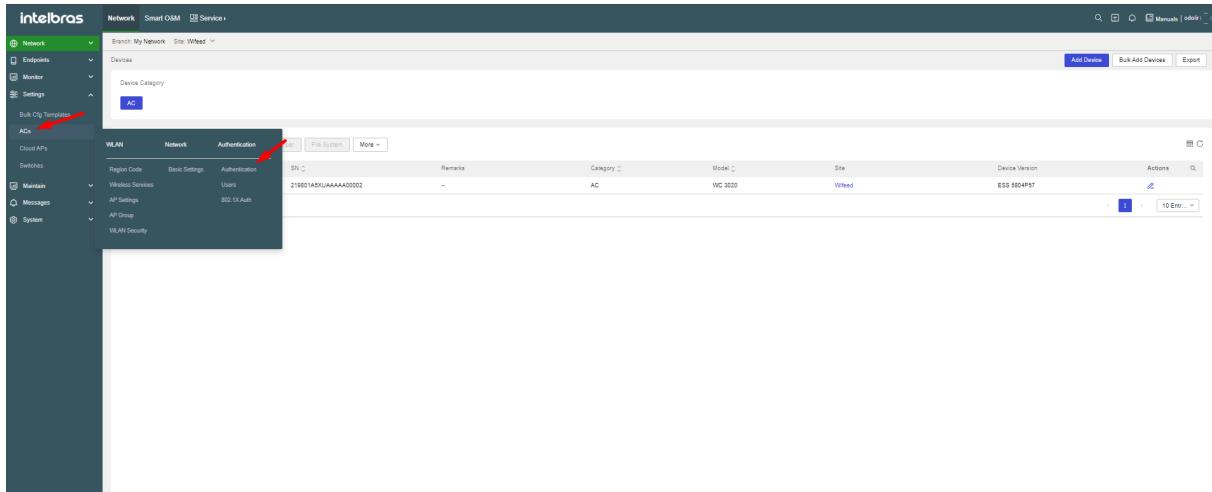


Figura 26: Image Created by The Author

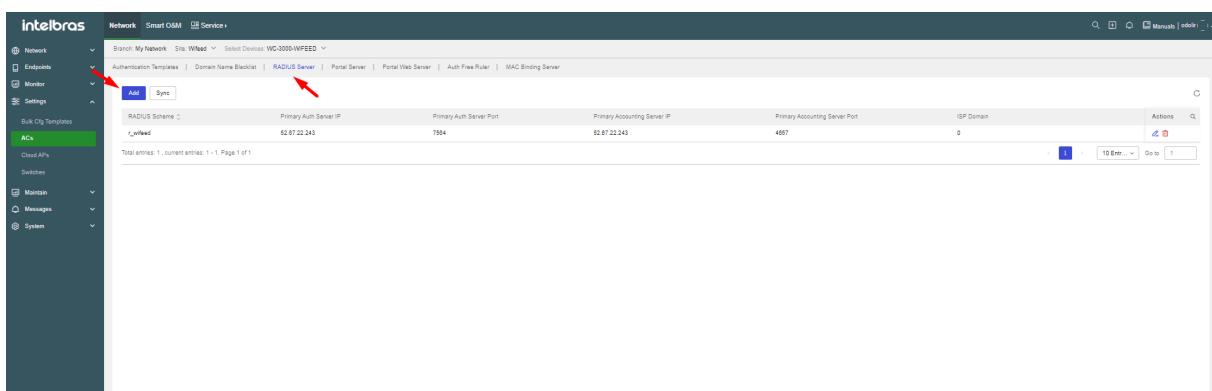
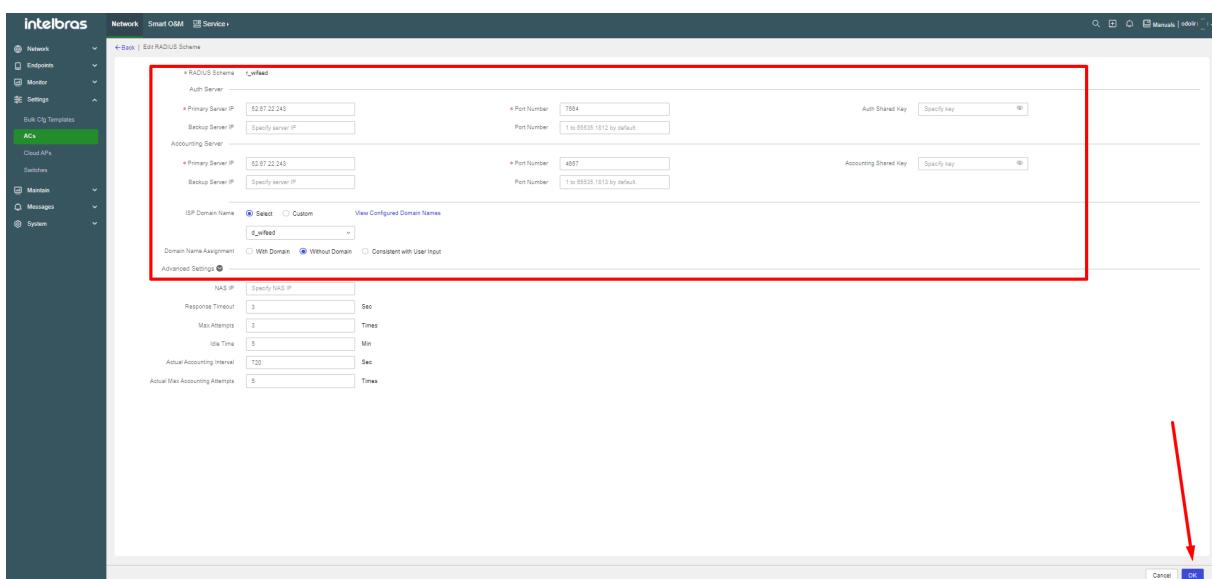


Figura 27: Image Created by The Author



#### 4.3.2. Portal Web Server

Figura 28: Image Created by The Author

The screenshot shows the Intelbras Smart OMM web interface. In the top navigation bar, there are tabs for Network, Smart OMM, and Services. Under the Services tab, a dropdown menu shows 'Branch My Network', 'Site: Wifeed', and 'Select Device: WG-2000-WFEEED'. Below this, there are links for 'Authorization Templates', 'Domain Name Blacklist', 'RADIUS Server', 'Portal Server', 'Portal Free Rule', and 'MAC Binding Server'. A red arrow points to the 'Add' button, which is highlighted in blue. The main content area shows a table with one entry: 'w\_wifeed' with URL 'https://bigbox.wifeed.com.br/api/redirects/hs-intbrafuture'. The table has columns for Name, URL, Type, Reachability Test, and Actions. At the bottom right of the table, there are buttons for 'First', 'Previous', 'Next', 'Last', 'Per Page' (set to 10), and a refresh icon.

Figura 29: Image Created by The Author

This screenshot shows the 'Portal Web Server Configuration' dialog box. It includes fields for 'Server Name' (set to 'w\_wifeed'), 'URL' (set to 'Https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture'), 'Type' (set to 'Select'), and 'URL Parameter' (which contains four entries: 'source-address' with parameter name 'ip', 'source-mac' with parameter name 'mac', 'original' with parameter name 'originalurl', and 'originalurl' with parameter name 'originalurl'). A red box highlights the 'URL Parameter' section. A message at the bottom right says 'Existem mais parâmetros a serem configurados via CLI. Verifique os próximos passos.' (There are more parameters to be configured via CLI. Check the next steps.). At the bottom right, there are 'Cancel' and 'OK' buttons, with a red arrow pointing towards the 'OK' button.

```
1 portal web-server w_wifeed
2 url https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture
3 server-detect log
4 server-type http-auth
5 url-parameter ap_ip bas-ip
6 url-parameter ap_mac ap-mac format section 6 lowercase
7 url-parameter ip source-address
8 url-parameter mac source-mac format section 6 lowercase
9 url-parameter original-url original-url
10 url-parameter ssid ssid
```

#### 4.3.3. Portal Free rule

Figura 30: Image Created by The Author

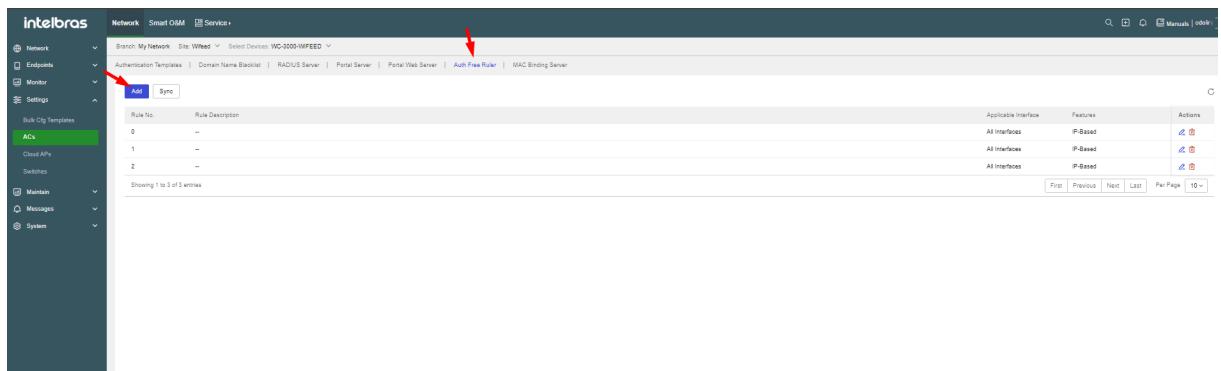


Figura 31: Image Created by The Author

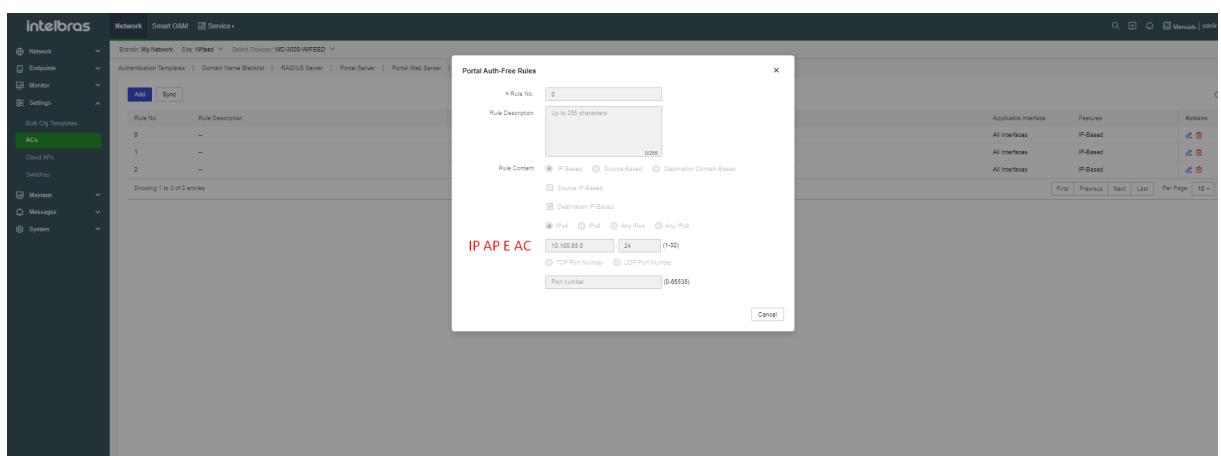
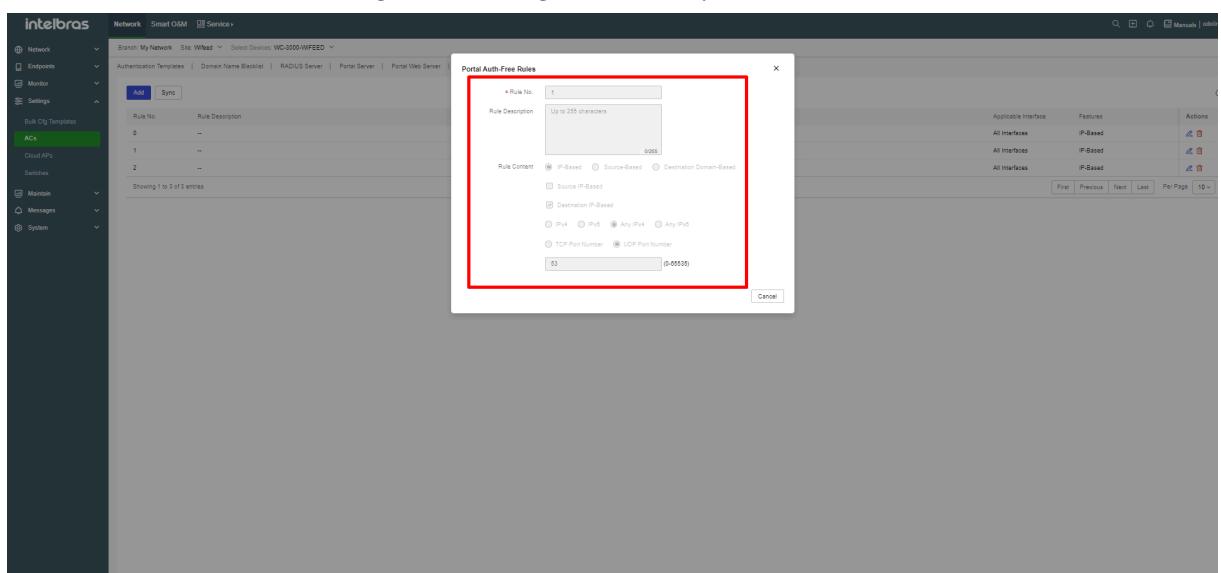


Figura 32: Image Created by The Author



#### 4.3.4. Service template

Figura 33: Image Created by The Author

Wireless Service Name	SSID	State	Bound APs	Layer 2 Isolation	Encryption	Scheduled Shutdown Detail	Last Time Execution Time	Last Time Execution Result	Actions
intelbras_Wireless-Pointgooooooo	On	2	Off	Off	None		—	—	<a href="#">Edit</a> <a href="#">Sync</a> <a href="#">Scheduled Shutdown</a> <a href="#">Cancel Scheduled Shutdown</a>

Figura 34: Image Created by The Author

Wireless Service Name	SSID	State	Bound APs	Layer 2 Isolation	Encryption	Scheduled Shutdown Detail	Last Time Execution Time	Last Time Execution Result	Actions
intelbras_Wireless-Pointgooooooo	On	2	Off	Off	None		—	—	<a href="#">Edit</a> <a href="#">Sync</a> <a href="#">Scheduled Shutdown</a> <a href="#">Cancel Scheduled Shutdown</a>

Figura 35: Image Created by The Author

Create Wireless Service

Basic Settings

Wireless Service Name:  Up to 10 Chinese characters.

Advanced Settings

Service State: ON

Hide SSID: Off

Layer 2 Isolation: Off

Forwarding Mode: Centralized

Guaranteed Bandwidth: 0

Client Rate Limit: 0

VLAN: 1 (1 to 4094, by default.)

Filter Client MACs: Denylist [Set Device](#) Allowlist [Set Allowlist](#)

OK Cancel Next

Figura 36: Image Created by The Author

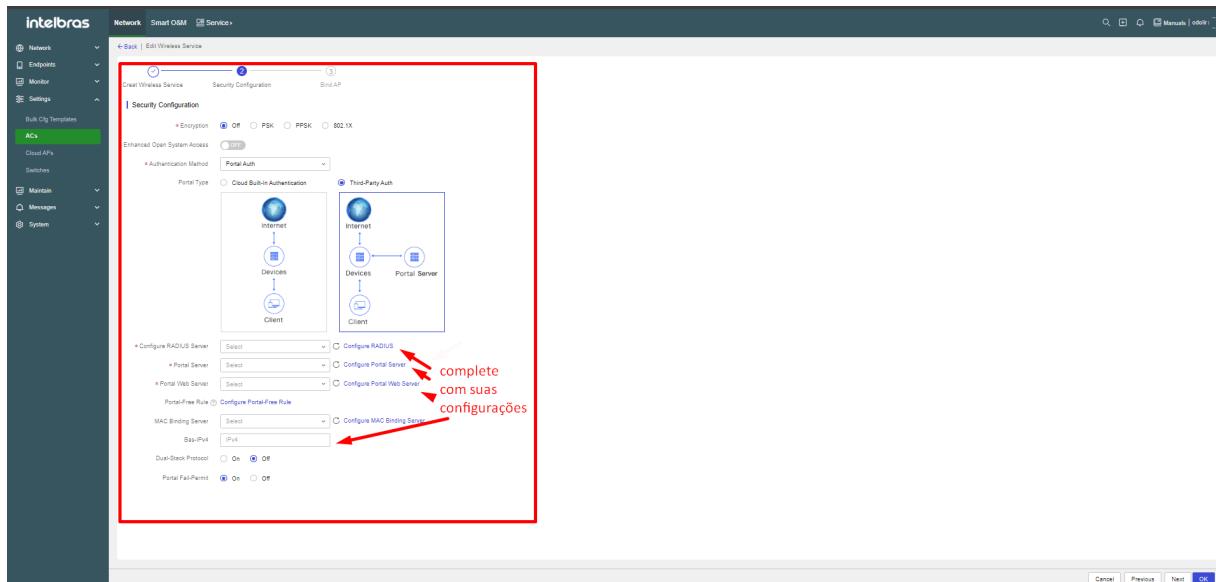
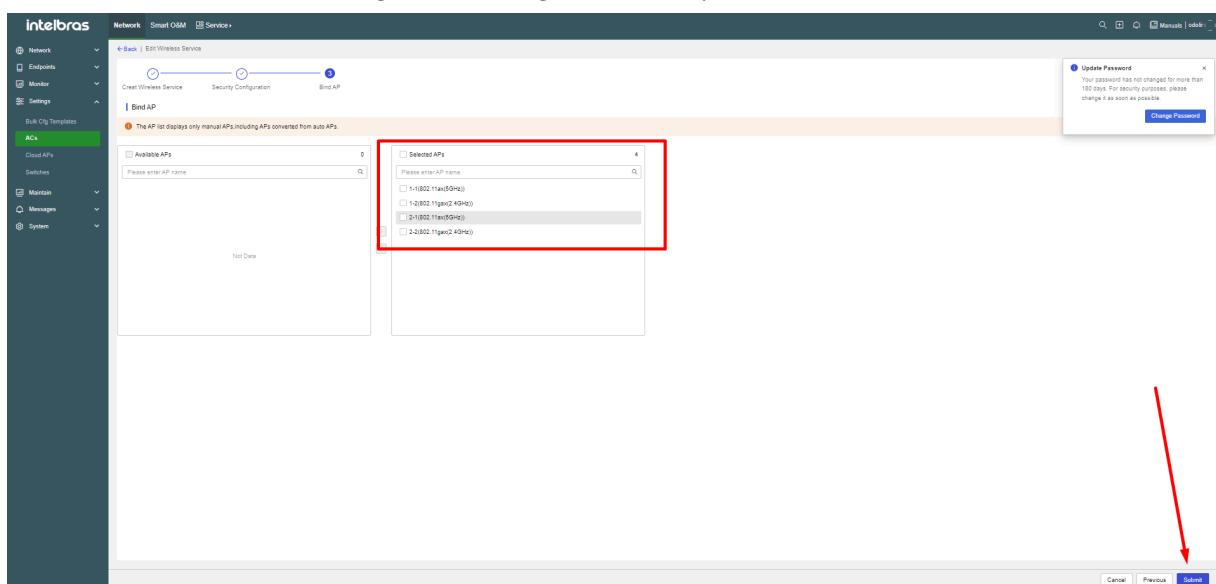


Figura 37: Image Created by The Author



#### 4.3.5. AC Template

Siga via CLI na WC 3000 e cole as configurações a seguir.

```

1 system-view
2 #
3 portal local-web-server http
4     login success-url https://bigbox.wifeed.com.br/api/redirect/hs-
5     intbrafuture
6     login failed-url https://bigbox.wifeed.com.br/api/redirect/hs-
7     intbrafuture
#
```

```
8      login      success-url      https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
9      login      failed-url      https://bigbox.wifeed.com.br/api/redirect/hs-
intbrafuture
10 #
11 portal web-server w_wifeed
12 url https://bigbox.wifeed.com.br/api/redirect/hs-intbrafuture
13 server-detect log
14 server-type http-auth
15 url-parameter ap_ip bas-ip
16 url-parameter ap_mac ap-mac format section 6 lowercase
17 url-parameter ip source-address
18 url-parameter mac source-mac format section 6 lowercase
19 url-parameter original-url original-url
20 url-parameter ssid ssid
```