



AUTOMATING WI-FI VALIDATIONS

WITH NO-CODE TOOLS

François Vergès, CWNE 180

WLPC PHOENIX 2026

Introduction

Keith R. Parsons

115+ Certifications/Countries

CWNE #3 - Produce #WLPC

20+ Years WLAN Experience



Wi-Fi Checklist v3

Top 20

Items to Review and Report

- 1 Captive Web Portal Use
- 2 1, 6, 11 Only
- 3 20 MHz Channels
- 4 40 MHz Channels
- 5 80 MHz Channels
- 6 Interference - Co-Channel
- 7 OBSS - Consistent Channel Bonding
- 8 Channels - DFS in Use
- 9 Minimum Basic Rates - Trim
- 10 SSID's - Across Bands
- 11 Signal - Primary RSSI
- 12 Signal - Secondary RSSI **
- 13 AP Transmit Power **
- 14 WPA 2/3 Transition **
- 15 WPA 3
- 16 802.11 k - Neighbor Report
- 17 802.11 r - Fast Transition **
- 18 802.11 v - Transition Management

	2.4GHz	5GHz	6GHz
1	Use only if required	Use only if required	Use only if required
2	Ch 1, 6, 11 Only	Not Applicable in 5GHz	Not Applicable in 6GHz
3	20MHz Channels Only	Use	Use
4	No 40MHz Ch	Check CCC	Use
5	Not Available in 2.4GHz	Not Recommended	Check CCC
6	>-85dBm	>-85dBm	Check CCC
7	Do NOT bond channels!	High Side Consistent	>-85dBm
8	Not Applicable	Use & Review	High Side Consistent
9	MBR>=12Mbps, No b	MBR>=12Mbps	Not Applicable in 6GHz
10	Have 2.4GHz-only SSIDs	Use w/RNR	MBR>=12Mbps
11	-67dBm	Use w/RNR	Use w/RNR
12	-67dBm	-65dBm	-65dBm
13	7dBm Target	-65dBm	-65dBm
14	Not Recommended	13dBm Target	16dBm Target
15	Recommended	Not Recommended	Not Allowed
16	Recommended	Recommended	Required
17	Recommended	Recommended	Recommended
18	Recommended	Recommended	Recommended

WI-CO MONTRÉAL - OCT. 2025



Items to Review and Report		2.4GHz			5GHz			6GHz		
1	Captive Web Portal Use		Use only if required	1		Use only if required	1		Use only if required	1
2	1, 6, 11 Only		Ch 1, 6, 11 Only	1		Not Applicable in 5GHz			Not Applicable in 6GHz	
3	20 MHz Channels		20MHz Channels Only	1		Use	1		Use	1
4	40 MHz Channels		No 40MHz Ch	1		Check CCC	0		Use	1
5	80 MHz Channels		Not Available in 2.4GHz	1		Not Recommended	1		Check CCC	1
6	Interference - Co-Channel		>-85dBm	1		>-85dBm	1		>-85dBm	1
7	OBSS - Consistent Channel Bonding		Do NOT bond channels!	1		High Side Consistent	1		High Side Consistent	1
8	Channels - DFS in Use		Not Applicable			Use & Review	1		Not Applicable in 6GHz	
9	Minimum Basic Rates - Trim		MBR>=12Mbps, No b	0		MBR>=12Mbps	0		MBR>=12Mbps	0
10	SSID's - Across Bands		Have 2.4GHz-only SSIDs	1		Use w/RNR	1		Use w/RNR	1
11	Signal - Primary RSSI		-67dBm	1		-65dBm	1		-65dBm	1
12	Signal - Secondary RSSI **		-67dBm	0		-65dBm	0		-65dBm	0
13	AP Transmit Power **		7dBm Target	0		13dBm Target	0		16dBm Target	1
14	WPA 2/3 Transition **		Not Recommended	1		Not Recommended	1		Not Allowed	1
15	WPA 3		Recommended	1		Recommended	1		Required	1
16	802.11 k - Neighbor Report		Recommended	1		Recommended	1		Recommended	1
17	802.11 r - Fast Transition **		Recommended	1		Recommended	1		Recommended	1
18	802.11 v - Transition Management		Recommended	1		Recommended	1		Recommended	1
19	Channels - Utilization/BSS Load **		Target <40%	1		Target <20%	1		Target <20%	1
20	Clients per Radio - BSS Load		<40	1		<40	1		<40	1

2.4 GHz Results 84%

5 GHz Results 79%

6 GHz Results 89%



CAN WE AUTOMATE THESE ENTRIES?

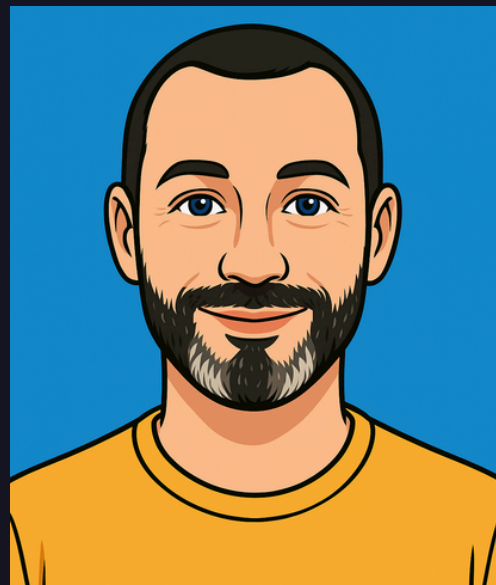
Items to Review and Report		2.4GHz		5GHz		6GHz	
1	Captive Web Portal Use	Use only if required	1	Use only if required	1	Use only if required	1
2	1, 6, 11 Only	Ch 1, 6, 11 Only	1	Not Applicable in 5GHz		Not Applicable in 6GHz	
3	20 MHz Channels	20MHz Channels Only	1	Use	1	Use	1
4	40 MHz Channels	No 40MHz Ch	1	Check CCC	0	Use	1
5	80 MHz Channels	Not Available in 2.4GHz	1	Not Recommended	1	Check CCC	1
6	Interference - Co-Channel	>-85dBm	1	>-85dBm	1	>-85dBm	1
7	OBSS - Consistent Channel Bonding	Do NOT bond channels!	1	High Side Consistent	1	High Side Consistent	1
8	Channels - DFS in Use	Not Applicable		Use & Review	1	Not Applicable in 6GHz	
9	Minimum Basic Rates - Trim	MBR>=12Mbps, No b	0	MBR>=12Mbps	0	MBR>=12Mbps	0
10	SSID's - Across Bands	Have 2.4GHz-only SSIDs	1	Use w/RNR	1	Use w/RNR	1
11	Signal - Primary RSSI	-67dBm	1	-65dBm	1	-65dBm	1
12	Signal - Secondary RSSI *^*	-67dBm	0	-65dBm	0	-65dBm	0
13	AP Transmit Power *^*	7dBm Target	0	13dBm Target	0	16dBm Target	1
14	WPA 2/3 Transition *^*	Not Recommended	1	Not Recommended	1	Not Allowed	1
15	WPA 3	Recommended	1	Recommended	1	Required	1
16	802.11 k - Neighbor Report	Recommended	1	Recommended	1	Recommended	1
17	802.11 r - Fast Transition *^*	Recommended	1	Recommended	1	Recommended	1
18	802.11 v - Transition Management	Recommended	1	Recommended	1	Recommended	1
19	Channels - Utilization/BSS Load *^*	Target <40%	1	Target <20%	1	Target <20%	1
20	Clients per Radio - BSS Load	<40	1	<40	1	<40	1

2.4 GHz Results 84%

5 GHz Results 79%

6 GHz Results 89%

FRANÇOIS VERGÈS



<https://www.linkedin.com/in/francoisverges/>



WI-CO



<https://wi-co.org/upcoming-events/toronto2026>



Toronto - April 22 2026



<https://wi-co.org/upcoming-events/toronto2026>



Lyon - July 2 2026





CAN WE AUTOMATE THESE ENTRIES?

Items to Review and Report		2.4GHz		5GHz		6GHz	
1	Captive Web Portal Use	Use only if required	1	Use only if required	1	Use only if required	1
2	1, 6, 11 Only	Ch 1, 6, 11 Only	1	Not Applicable in 5GHz		Not Applicable in 6GHz	
3	20 MHz Channels	20MHz Channels Only	1	Use	1	Use	1
4	40 MHz Channels	No 40MHz Ch	1	Check CCC	0	Use	1
5	80 MHz Channels	Not Available in 2.4GHz	1	Not Recommended	1	Check CCC	1
6	Interference - Co-Channel	>-85dBm	1	>-85dBm	1	>-85dBm	1
7	OBSS - Consistent Channel Bonding	Do NOT bond channels!	1	High Side Consistent	1	High Side Consistent	1
8	Channels - DFS in Use	Not Applicable		Use & Review	1	Not Applicable in 6GHz	
9	Minimum Basic Rates - Trim	MBR>=12Mbps, No b	0	MBR>=12Mbps	0	MBR>=12Mbps	0
10	SSID's - Across Bands	Have 2.4GHz-only SSIDs	1	Use w/RNR	1	Use w/RNR	1
11	Signal - Primary RSSI	-67dBm	1	-65dBm	1	-65dBm	1
12	Signal - Secondary RSSI *^*	-67dBm	0	-65dBm	0	-65dBm	0
13	AP Transmit Power *^*	7dBm Target	0	13dBm Target	0	16dBm Target	1
14	WPA 2/3 Transition *^*	Not Recommended	1	Not Recommended	1	Not Allowed	1
15	WPA 3	Recommended	1	Recommended	1	Required	1
16	802.11 k - Neighbor Report	Recommended	1	Recommended	1	Recommended	1
17	802.11 r - Fast Transition *^*	Recommended	1	Recommended	1	Recommended	1
18	802.11 v - Transition Management	Recommended	1	Recommended	1	Recommended	1
19	Channels - Utilization/BSS Load *^*	Target <40%	1	Target <20%	1	Target <20%	1
20	Clients per Radio - BSS Load	<40	1	<40	1	<40	1

2.4 GHz Results 84%

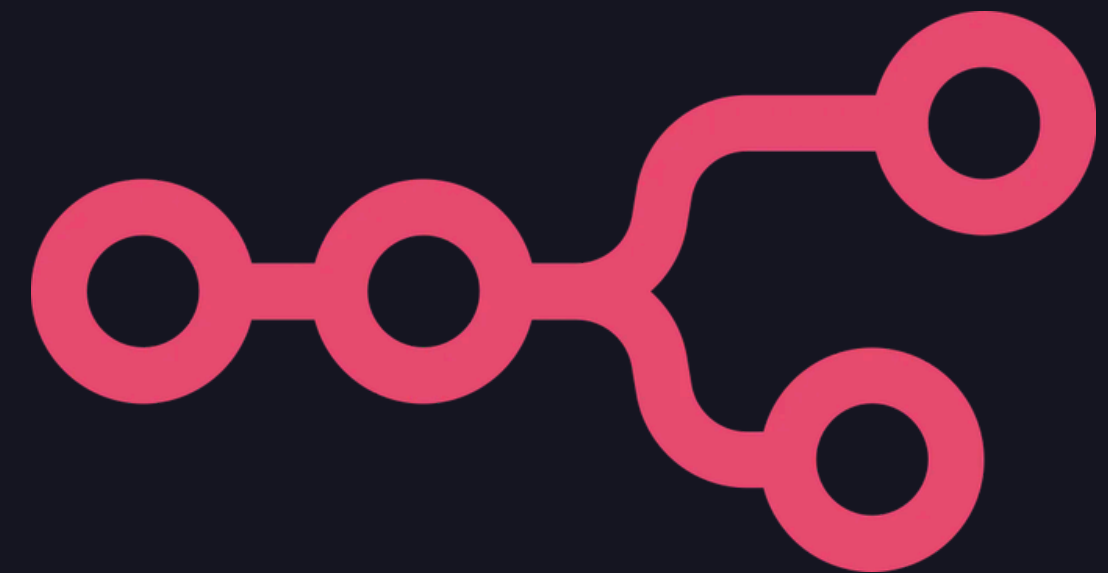
5 GHz Results 79%

6 GHz Results 89%

N8N

n(odematio)n

- Open source automation tool
- AI-Ready
- Lots of integrations



N8N - DEPLOYMENT

LOCAL

- Runs locally with Docker / npx
- Free
- Hard to keep on all the time

SELF-HOSTED

- Docker / VPS
- About 5\$/month
- Setup required

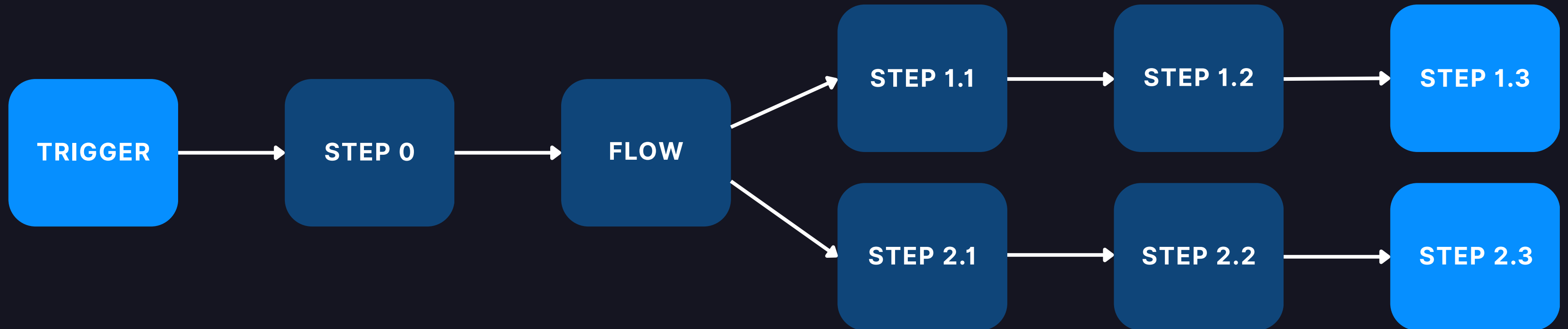
N8N SAAS

- Easy setup
- Starts at 20\$/month
- More expensive

Community edition available



N8N - WORKFLOW



An n8n workflow is JSON file

N8N - NODES

TRIGGER

- Manual trigger
- Webhook
- Schedule

INTEGRATION

- Pre-defined operations (Gmail, Slack, etc.)
- API connectors
- File operations

LOGIC / FLOW

- Switch (if)
- Merge
- Filter / Split
- Loop

CUSTOM / AI

- Code (JS / Python)
- AI Agent

*Each node has an **input** and an **output***





WHERE IS THE DATA?

Beacons

95%* of data

Configurations

Remaining

Items to Review and Report

1	Captive Web Portal Use
2	1, 6, 11 Only
3	20 MHz Channels
4	40 MHz Channels
5	80 MHz Channels
6	Interference - Co-Channel
7	OBSS - Consistent Channel Bonding
8	Channels - DFS in Use
9	Minimum Basic Rates - Trim
10	SSID's - Across Bands
11	Signal - Primary RSSI
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13	AP Transmit Power **
14	WPA 2/3 Transition **
15	WPA 3
16	802.11 k - Neighbor Report
17	802.11 r - Fast Transition **
18	802.11 v - Transition Management
19	Channels - Utilization/BSS Load **
20	Clients per Radio - BSS Load

2.4GHz

	Use only if required	1
	Ch 1, 6, 11 Only	1
	20MHz Channels Only	1
	No 40MHz Ch	1
	Not Available in 2.4GHz	1
	>-85dBm	1
	Do NOT bond channels!	1
	Not Applicable	
	MBR>=12Mbps, No b	0
	Have 2.4GHz-only SSIDs	1
	-67dBm	1
	-67dBm	0
	7dBm Target	0
	Not Recommended	1
	Recommended	1
	Recommended	1
	Recommended	1
	Recommended	1
	Target <40%	1
	<40	1

5GHz

	Use only if required	1
	Not Applicable in 5GHz	
	Use	1
	Check CCC	0
	Not Recommended	1
	>-85dBm	1
	High Side Consistent	1
	Use & Review	1
	MBR>=12Mbps	0
	Use w/RNR	1
	-65dBm	1
	-65dBm	0
	13dBm Target	0
	Not Recommended	1
	Recommended	1
	Recommended	1
	Recommended	1
	Recommended	1
	Target <20%	1
	<40	1

6GHz

	Use only if required	1
	Not Applicable in 6GHz	
	Use	1
	Use	1
	Check CCC	1
	>-85dBm	1
	High Side Consistent	1
	Not Applicable in 6GHz	
	MBR>=12Mbps	0
	Use w/RNR	1
	-65dBm	1
	-65dBm	0
	16dBm Target	1
	Not Allowed	1
	Required	1
	Recommended	1
	Recommended	1
	Recommended	1
	Target <20%	1
	<40	1

2.4 GHz Results 84%

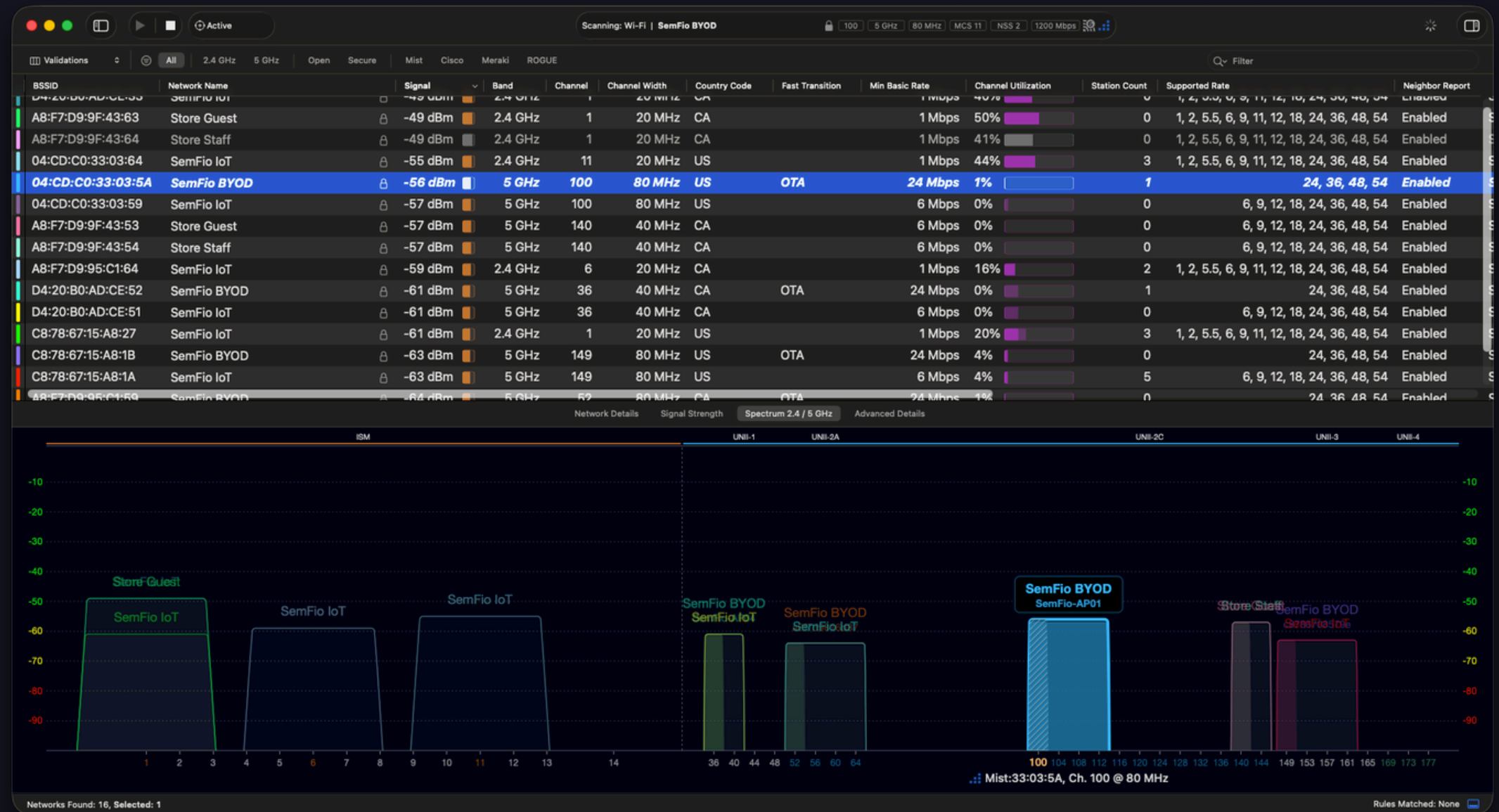
5 GHz Results 79%

6 GHz Results 89%

GATHER THE DATA



WIFI EXPLORER PRO



GATHER THE DATA



WIFI EXPLORER PRO

Custom Profile

The screenshot shows the 'Profiles' configuration window in SemFio. The 'Active profile' is set to 'Validations'. The 'Show profile chooser in toolbar' checkbox is checked. The main area displays a table of validation fields with 'Show' and 'Pin' checkboxes.

Show	Pin	Name	Field
<input checked="" type="checkbox"/>	<input type="checkbox"/>	BSSID	
<input type="checkbox"/>	<input type="checkbox"/>	Count	
<input type="checkbox"/>	<input type="checkbox"/>	AP Name	
<input type="checkbox"/>	<input type="checkbox"/>	Annotations	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Network Name	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Signal	
<input type="checkbox"/>	<input type="checkbox"/>	Noise	
<input type="checkbox"/>	<input type="checkbox"/>	SNR	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Band	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Channel	
<input type="checkbox"/>	<input type="checkbox"/>	Center Frequency	
<input type="checkbox"/>	<input type="checkbox"/>	Wide Channel	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Channel Width	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Country Code	



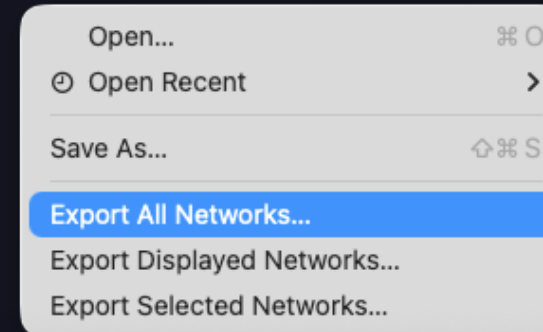
GATHER THE DATA



WIFI EXPLORER PRO

Custom Profile

CSV Export



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	BSSID	Network Name	Signal (dBm)	Band	Channel	Channel Width	Country Code	Fast Transition	Min Basic Rate	Channel Util	Station Count	Supported Rates	Neighbor Report	BSS Transition
2	A8:F7:D9:95	SemFio IoT	-64	5 GHz	52	80 MHz	CA		6	1	1	6, 9, 12, 18, 24	Enabled	Supported
3	C8:78:67:15	SemFio IoT	-63	2.4 GHz	1	20 MHz	US		1	30	3	1, 2, 5.5, 6, 9	Enabled	Supported
4	A8:F7:D9:95	SemFio BYOD	-64	5 GHz	52	80 MHz	CA	OTA	24	1	0	24, 36, 48, 54	Enabled	Supported
5	C8:78:67:15	SemFio IoT	-62	5 GHz	149	80 MHz	US		6	4	5	6, 9, 12, 18, 24	Enabled	Supported
6	D4:20:B0:AD	SemFio IoT	-61	5 GHz	36	40 MHz	CA		6	0	0	6, 9, 12, 18, 24	Enabled	Supported
7	04:CD:C0:33	SemFio BYOD	-55	5 GHz	100	80 MHz	US	OTA	24	1	1	24, 36, 48, 54	Enabled	Supported
8	A8:F7:D9:9F	Store Guest	-55	5 GHz	140	40 MHz	CA		6	0	0	6, 9, 12, 18, 24	Enabled	Supported
9	04:CD:C0:33	SemFio IoT	-56	5 GHz	100	80 MHz	US		6	1	0	6, 9, 12, 18, 24	Enabled	Supported
10	A8:F7:D9:9F	Store Guest	-48	2.4 GHz	1	20 MHz	CA		1	50	0	1, 2, 5.5, 6, 9	Enabled	Supported
11	C8:78:67:15	SemFio BYOD	-63	5 GHz	149	80 MHz	US	OTA	24	4	0	24, 36, 48, 54	Enabled	Supported
12	A8:F7:D9:9F	Store Staff	-55	5 GHz	140	40 MHz	CA		6	0	0	6, 9, 12, 18, 24	Enabled	Supported
13	04:CD:C0:33	SemFio IoT	-50	2.4 GHz	11	20 MHz	US		1	18	3	1, 2, 5.5, 6, 9	Enabled	Supported
14	A8:F7:D9:9F	Store Staff	-48	2.4 GHz	1	20 MHz	CA		1	50	0	1, 2, 5.5, 6, 9	Enabled	Supported
15	D4:20:B0:AD	SemFio IoT	-49	2.4 GHz	1	20 MHz	CA		1	40	0	1, 2, 5.5, 6, 9	Enabled	Supported
16	A8:F7:D9:95	SemFio IoT	-62	2.4 GHz	6	20 MHz	CA		1	10	2	1, 2, 5.5, 6, 9	Enabled	Supported
17	D4:20:B0:AD	SemFio BYOD	-61	5 GHz	36	40 MHz	CA	OTA	24	0	1	24, 36, 48, 54	Enabled	Supported
18	0C:AC:8A:85	Å£, Å£ Hidden	-42	5 GHz	44	160 MHz	CA		6	1	0	6, 9, 12, 18, 24	Enabled	Supported

VALIDATION PROCESS

with tools



INPUT DATA TO N8N

HTML FORM

1. **Scan** results (csv)
2. **SSID** to validate
3. **Country**

Wi-Fi Validations

WIFI EXPLORER CSV

no file selected

TARGET SSID

COUNTRY

Based on WLAN Pros' WiFi Checklist

RESULTS PRESENTATION

HTML PAGE

1. Overall Score
2. Detailed results

Wi-Fi Validations 62%

SSID: Porter-WIFI

2.4 GHZ CHANNELS - 1, 6, 11 ONLY PASS

VALIDATION LOGIC
All 3x 2.4 GHz radios are using channels 1, 6, or 11.

2.4 GHz

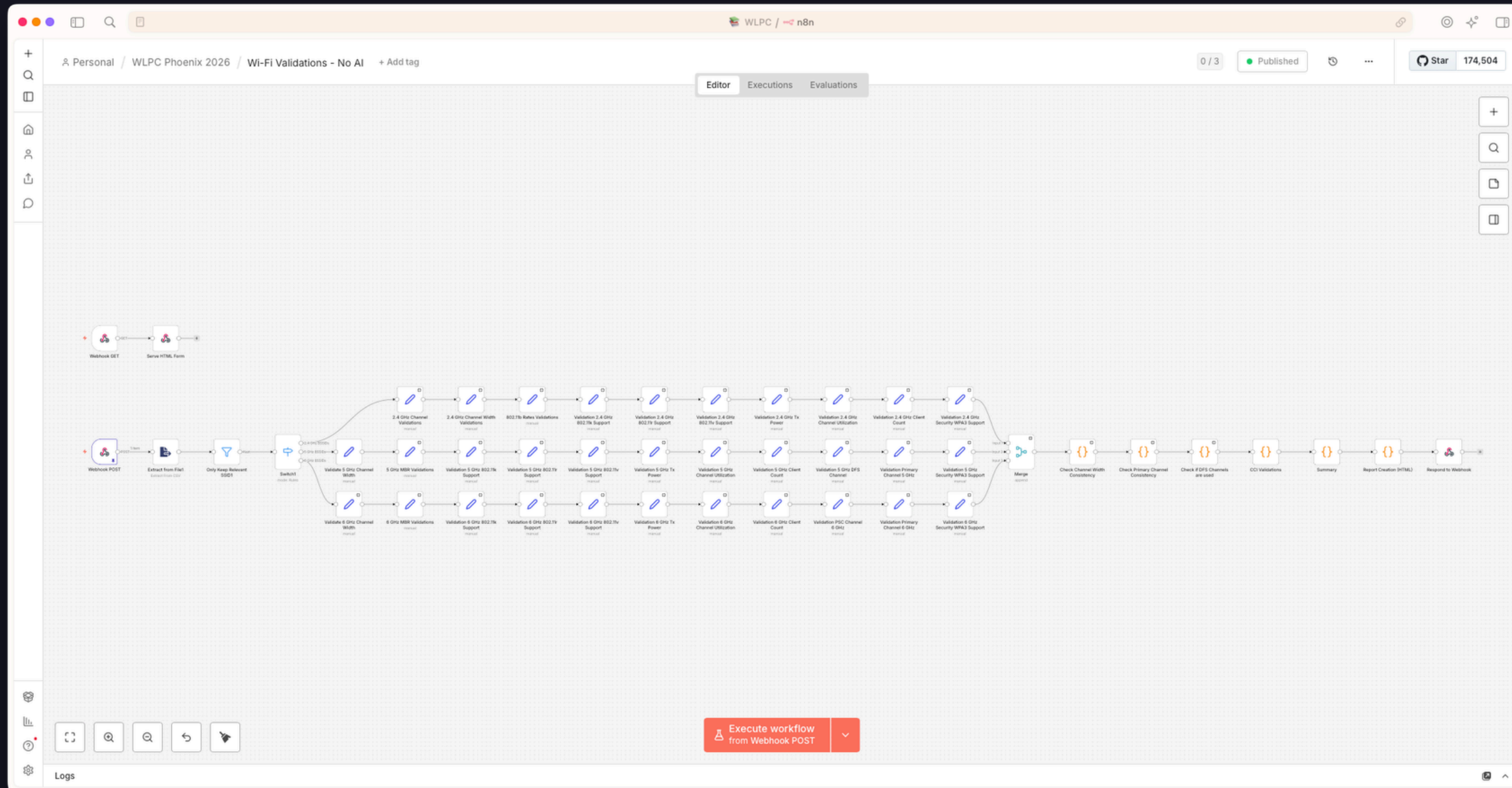
BSSID	VALUE	TARGET	STATUS
D0:4D:C6:BC:E5:20	Channel 11	Channel 1, 6, or 11	PASS
D0:4D:C6:BC:4E:00	Channel 6	Channel 1, 6, or 11	PASS
D0:4D:C6:BC:5A:80	Channel 1	Channel 1, 6, or 11	PASS

CHANNEL WIDTH PASS

INTERFERENCE - CO-CHANNEL PASS

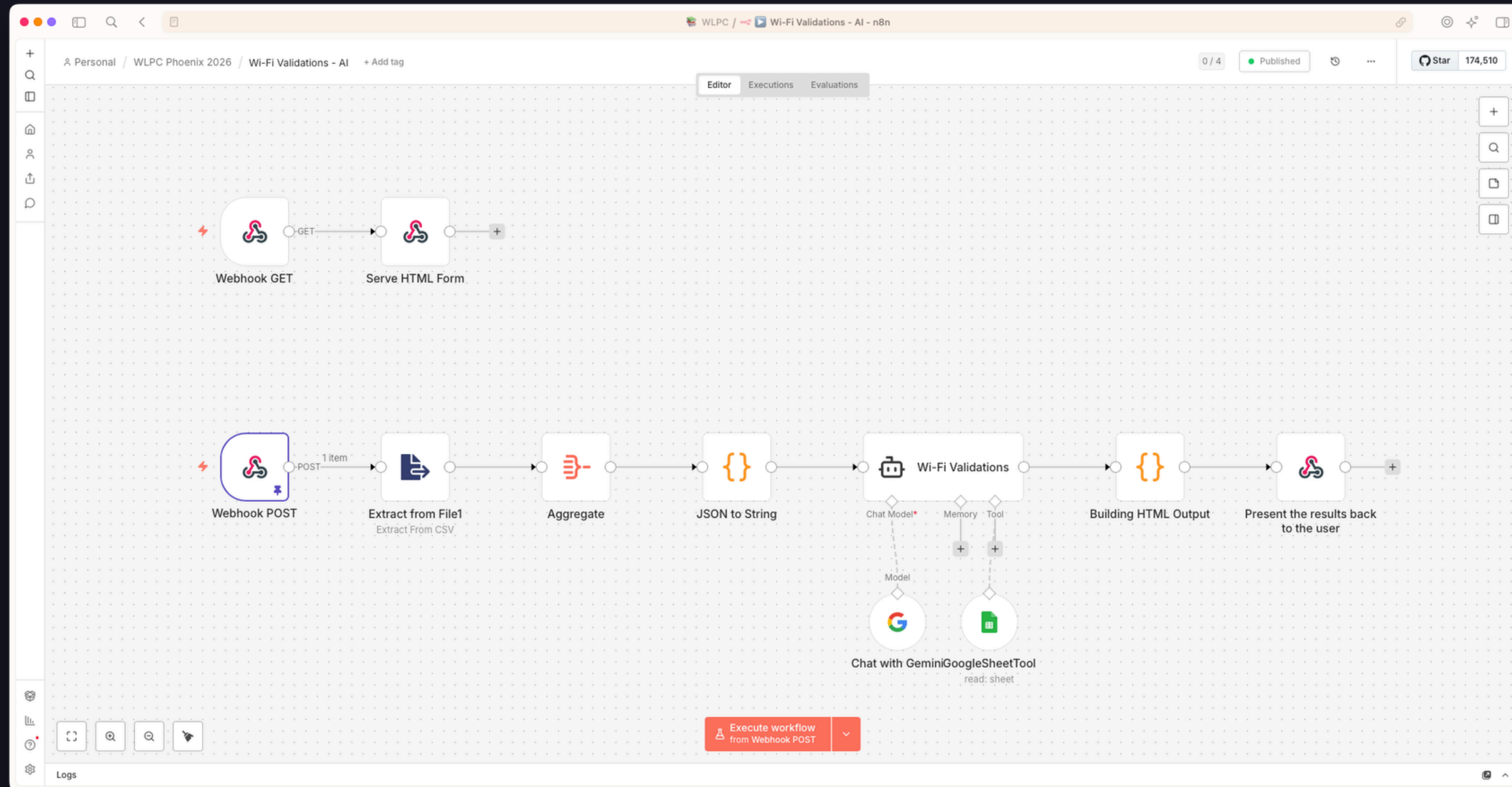
N8N WORKFLOW

with NO AI



N8N WORKFLOW

with AI



WHAT WORKS WELL

with n8n

SHARING

- JSON-base sharing
- Easy to copy & modify
- Free option

INTEGRATED UI

- Built-in webhooks
- No need to setup additional UI

AI INTEGRATION

- Native AI Nodes
- Contextual Summaries

LOW-CODE

- Flexibility to add code
- Unlimited complexity

CHALLENGES

with n8n

STORAGE

n8n is an **orchestrator**, not a database!

- No history
- No context
- No settings

MULTI-SCANS

Harder to implement more advanced logic.

- Corrolation between multiple scans

CHALLENGES

with AI

PROMPTING

Challenging to find the perfect prompt.

I was faced with:

- Hallucinations
- Inconsistent results
- Assumptions

SPEED

Takes a few minutes for each analysis.

IMPROVEMENTS

for this Wi-Fi validation tool

N8N ENHANCEMENTS

- Integrations with your tools (slack, notion)
- Saving option
- Error management
- **Fine-tune the AI**

VIBE CODING

- Build web app based on the workflow
- Ability to build a more complete tool

DEEPER LOOK



https://github.com/francoisverges/n8n_wi-fi_validations

GITHUB

