

NetConsole

Open-source tool
to configure multiple switches

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Problems

- In Vietnam, many switches still alive over 20 years.
- Many daily tasks related to switch configuration
- Human errors in manual configuration
- Finding an IP or MAC address is simple, but process actually time-consuming
- Budget for software to manage network devices is a long story.

NetConsole

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- Open-source, centralized solution for network devices console
- Focus on “Level 1” network operations
- Reduced permissions can do on devices
- Decreased human errors in manual configuration
- Configure multiple switches

Key Features

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Dashboard

Groups

Credentials

Switches

Interfaces

MAC

ARP

IP Intf

Group Config

Logs

User Settings

Admin

- Switches Management: System info, switches group
- Interfaces config: change VLAN access/trunk, show running-config, shutdown
- Collect information: MAC Address, ARP, IP Interface and tracking online duration with First Seen, Last Seen
- Multiple switches config

Key Features

Switches Management

Search

+ Add Switch

ID	HOSTNAME	IP ADDRESS	MODEL	VERSION
40	<div></div>	10.1	Nexus3000 C3132...	9.3(12)
45		10.1	Nexus3000 C3132...	9.3(12)
39		10.1	Nexus 3048 Chas...	9.3(13)
25		10.1	Nexus 3048 Chas...	7.0(3)I7(9)
26		10.1	WS-C3750G-48TS	C3750 Software ...
38		10.1	Nexus 3048 Chas...	9.3(13)
22		10.1	Nexus 3048 Chas...	7.0(3)I7(10)
18		10.1	Nexus 3048 Chas...	9.3(10)

Key Features

Interfaces Management								
10.14.1. <div></div>		U43 - NEXUS 3048 CHAS...		Sync Switch Running Config		<div>Search</div>		
ID	INTERFACE	DESCRIPTION	STATUS	VLAN	MODE	SPEED	ACTIONS	
2486	Ethernet1/1	ID -1	connected	1403	access	1000	Show run-config	Actions
2495	Ethernet1/10	LA R	connected	1402	access	1000	Show run-config	Actions
2496	Ethernet1/11	ID ES	connected	1403	access	1000	Show run-config	Actions
2497	Ethernet1/12	LA	connected	1402	access	1000	Show run-config	Actions
2498	Ethernet1/13	iLO d	connected	1480	access	1000	Show run-config	Actions
2499	Ethernet1/14	La sd	connected	1480	access	1000	Show run-config	Actions
2500	Ethernet1/15	iLO yme	connected	1480	access	1000	Show run-config	Actions
2501	Ethernet1/16	La yme	connected	1480	access	1000	Show run-config	Actions

Key Features

MAC Addresses Management

SELECT SWITCH...

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Search

ID	MAC ADDRESS	INTERFACE	VLAN	STATIC	ACTION	SWITCH	LAST SEEN	
8369	00000000003d	Ethernet1/16	1480	false	Actions ▼	<div></div>	3048TP_U42	2025-06-05T04:13:00.611717
10891	00000000003d	Po45	1480	false	Actions ▼		3750G_U40	2025-01-20T01:00:16.751117
48630	00000000003d	Port-channel42	1480	false	Actions ▼		_U47_E12	2025-01-22T10:29:52.195662
48710	00000000003d	Port-channel42	1480	false	Actions ▼		3048TP_U42	2025-03-14T15:47:56.489013
48916	00000000003d	Port-channel42	1480	false	Actions ▼		_U45_E12	2025-03-26T10:12:10.310824
27060	000000000315	Port-channel3	805	false	Actions ▼		1_U29	2024-10-16T01:06:11.586626
27445	000000000315	Port-channel3	805	false	Actions ▼		2_U27	2024-10-16T01:06:21.871650
26780	000000000315	Port-channel15	805	false	Actions ▼		Route	2024-10-16T01:06:37.851326

Key Features

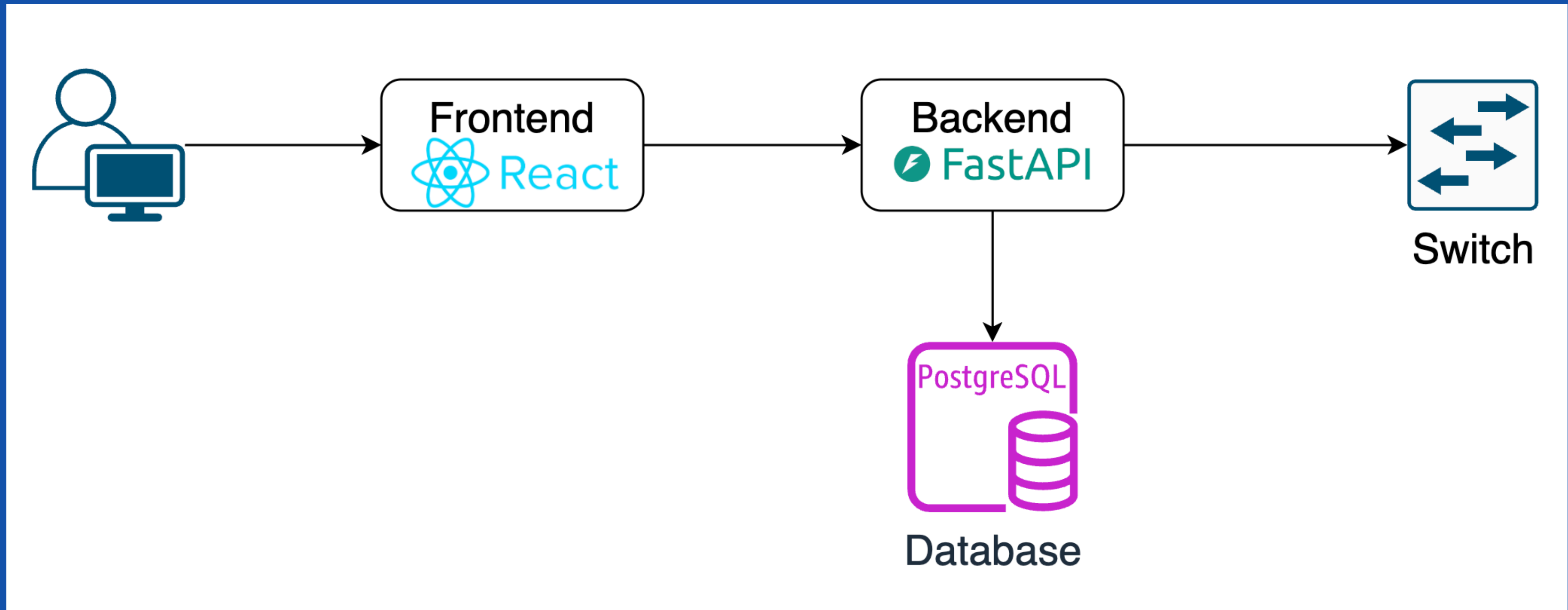
IP Interfaces Management						
10.1 - NEXUS3000 C3132Q CHASSIS					Search	
ID	INTERFACE	IPV4	HOSTNAME	ACTION	LAST SEEN	
459	Vlan1400	10.1.1.9		Actions	2025-01-22T10:29:52.243539	
454	Vlan1401	10.1.1.24		Actions	2025-01-22T10:29:52.243539	
460	Vlan1401	10.1.1.4		Actions	2025-01-22T10:29:52.243539	
455	mgmt0	10.1.1.24		Actions	2025-03-13T03:12:46.007884	
461	Vlan1402	10.1.1.4		Actions	2025-01-22T10:29:52.243539	
462	Vlan1403	10.1.1.4		Actions	2025-01-22T10:29:52.243539	
463	Vlan1404	10.1.1.4		Actions	2025-01-22T10:29:52.243539	
464	Vlan1407	10.1.1.4		Actions	2025-01-22T10:29:52.243539	
457	Vlan1481	10.1.1.136/25		Actions	2025-01-22T10:29:52.243539	

Key Features

Arps Management								
SELECT SWITCH...				<div><div></div>Search</div>				
ID	IP ADDRESS	MAC ADDRESS	INTERFACE	SWITCH	ACTION	FIRST SEEN	LAST SEEN	
47	10.1.1.39	0050.56.80.05	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
52	10.1.1.44	0050.56.80.09	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
53	10.1.1.45	0050.56.80.08	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
3045	10.1.1.243	5040.00.00.0d	vlan.1492	Fabric	Actions	2024-07-04T10:03:46.999224	2024-08-15T00:00:00.000000	
60	10.1.1.53	0050.56.80.03	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
75	10.1.1.71	0050.56.80.0a	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
76	10.1.1.72	0050.56.80.04	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
77	10.1.1.73	0050.56.80.02	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	
79	10.1.1.75	0050.56.80.04	Vlan1130	Vlan1130	Actions	2024-06-02T15:52:22.666322	2024-09-26T00:00:00.000000	

Architecture

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Python libs

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- **nornir-netmiko**: access switches and configure multiple switches
- **napalm**: get switches information in json data
- **ttp** - Template Text Parser: parse configuration

Future work

- Interfaces mode: layer 2 security features
- Dashboard management: DHCP Snooping
- Source of truth: netbox
- Configuration revision number

Thank you

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- **NetConsole:** <https://github.com/thangphan205/netconsole>
- **Video demo:** [NetConsole - Introduce main features](#)
- **My Youtube Channel** (Vietnamese): @NetworkThucChien