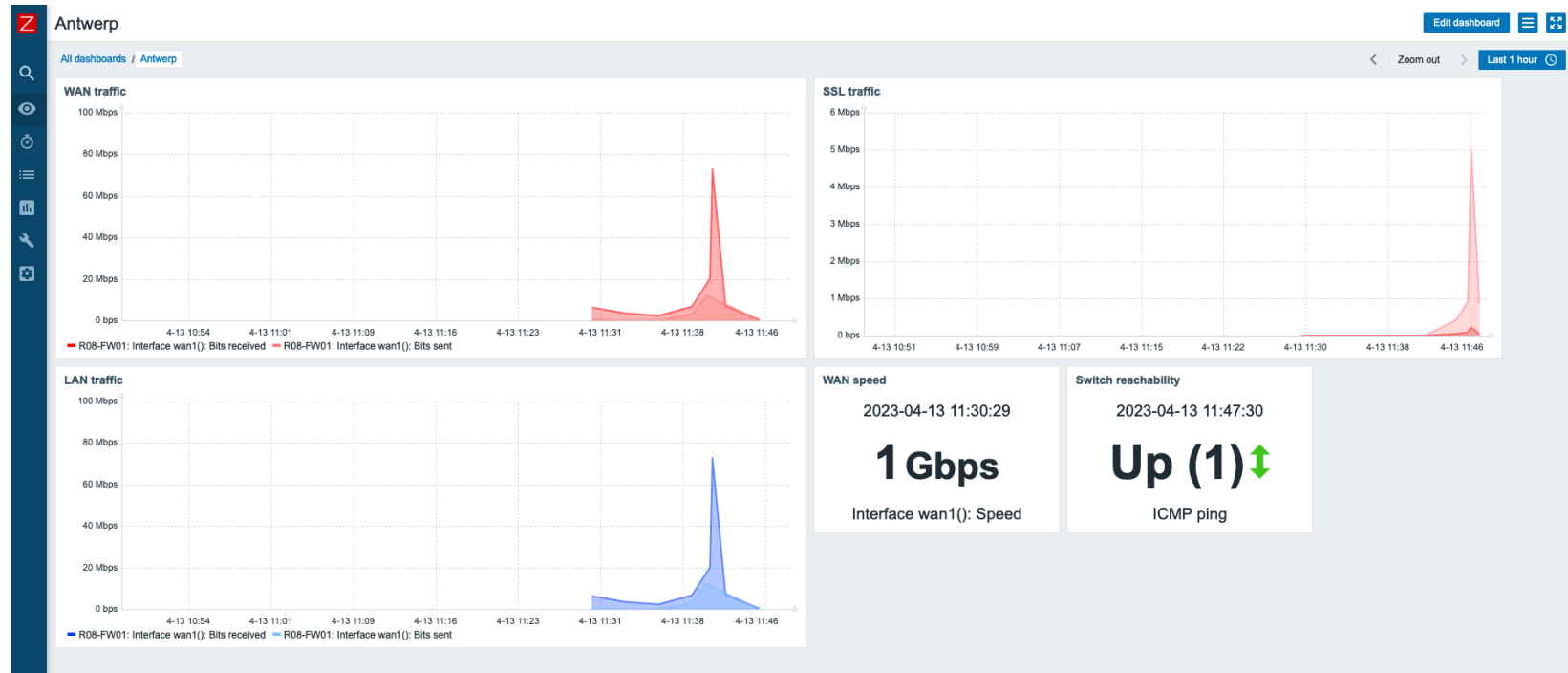
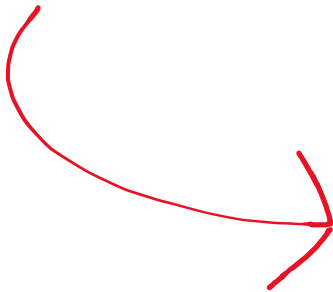


Integrate Zabbix with Netbox

Synchronize Zabbix with a
Source of Truth

What are we trying to achieve?

<input type="checkbox"/>	Name	Status	Tenant	Role	Type	Platform	Site	Rack	IP Address
<input type="checkbox"/>	R08-FW01	Active	—	Firewall	FortiGate 200F	FortiOS	Antwerp	R08	10.88.236.10/24
<input type="checkbox"/>	R08-SW01-0	Active	—	Switch	SRX4100	—	Antwerp	R08	10.88.236.1/24
<input type="checkbox"/>	R08-SW01-1	Active	—	Switch	SRX4100	juniper_junos	Antwerp	R08	10.88.236.2/24



The concept of a Source of Truth

- All your data centralized
- Integrate systems with your SoT
- One reliable place to administrate all data
- Eliminate duplicate data



Netbox as SoT

- DCIM (DataCenter Infrastructure Management)
- IPAM (IP Address Management)
- Circuits
- Cabling
- Power distribution
- Flexible and modular
- Desired infrastructure state
- Great REST API



What data is required from Netbox

- Hostname
- IP address
- Hostgroup
- Template
- Interface type information (defaults to SNMPv2)

Devices in Netbox

The screenshot displays the Netbox web interface. On the left is a sidebar with navigation menus for Organization, Devices, Device Types, and Device Components. The main content area shows the configuration for a specific device, R08-FW01, under the Antwerp site. The interface includes a search bar at the top, a breadcrumb trail, and a set of tabs for different views of the device. The 'Device' tab is active, showing a table of attributes. To the right of the table is a 'Management' section with fields for Status, Role, Platform, and IP addresses. Below this is a 'Services' section with an 'Add Service' button. At the bottom is a 'Contacts' section.

netbox

Search

twan

Devices > Antwerp

R08-FW01

Created 2023-03-31 15:55 · Updated 0 minutes ago

+ Add Components Clone Edit Delete

dcim.device:92

Device Interfaces 30 Console Ports 1 Power Ports 2 Config Context Status LLDP Neighbors Config Journal Changelog

Device	
Region	—
Site	Antwerp
Location	First floor
Rack	R08
Position	U30 / Front
Tenant	—
Device Type	Fortinet FortiGate 200F (1U)
Description	—
Airflow	Front to rear
Serial Number	ABC123
Asset Tag	—

Management

Status	Active
Role	Firewall
Platform	FortiOS
Primary IPv4	10.88.236.10
Primary IPv6	—

Services

None

+ Add Service

Contacts

Netbox can help us

Custom Fields

Zabbix template

Created 2022-11-24 19:01 · Updated 4 months ago

extras.customfield:10

[Clone](#) [Edit](#) [Delete](#)

Custom Field

[Changelog](#)

Custom Field

Name	zabbix_template
Label	—
Group Name	—
Type	Text
Description	—
Required	✖
Search Weight	1000
Filter Logic	Loose
Display Weight	100
UI Visibility	Read/Write

Assigned Models

dcim | device type

Validation Rules

Minimum Value —

Maximum Value —

Regular Expression —

Netbox device types

[Device Types](#) > [Fortinet](#)

Fortinet FortiGate 200F

Created 2023-02-18 08:49 · Updated 1 month, 1 week ago

dcim.devicetype:25 (fg-200f)

+ Add Components ▾

Clone

Edit

Delete

Device Type

[Interfaces](#) 30

[Console Ports](#) 1

[Power Ports](#) 2

[Journal](#)

[Changelog](#)

Chassis

Manufacturer [Fortinet](#)

Model Name FortiGate 200F
fg-200f

Part Number FG-200F

Description —

Height (U) 1

Full Depth ✖

Weight —

Parent/Child —

Airflow —

Front Image —

Rear Image —

Instances 3

Custom Fields

Zabbix template ICMP Ping

Tags

No tags assigned

Comments

None

Hostgroup generation

- Dynamic layout
 - Default is site/manufacturer/device role
 - Customizable for different parameters
 - Site
 - Manufacturer
 - Role
 - Tenant
 - Custom field data

Devices in Netbox

The screenshot displays the Netbox web interface. On the left is a sidebar with navigation links: Organization, Devices (selected), DEVICES (with sub-links for Devices, Modules, Device Roles, Platforms, Virtual Chassis, and Virtual Device Contexts), DEVICE TYPES (with sub-links for Device Types, Module Types, and Manufacturers), and DEVICE COMPONENTS (with sub-links for Interfaces, Front Ports, Rear Ports, Console Ports, and Console Server Ports). The main content area shows the breadcrumb 'Devices > Antwerp' and the device name 'R08-FW01'. It includes a search bar, a user dropdown 'twan', and a timestamp 'Created 2023-03-31 15:55 · Updated 0 minutes ago'. Action buttons for '+ Add Components', 'Clone', 'Edit', and 'Delete' are present. A tabbed interface shows 'Device' as the active tab, with other tabs for 'Interfaces' (30), 'Console Ports' (1), 'Power Ports' (2), 'Config Context', 'Status', 'LLDP Neighbors', 'Config', 'Journal', and 'Changelog'. The 'Device' tab contains a table with fields: Region, Site (Antwerp), Location (First floor), Rack (R08), Position (U30 / Front), Tenant, Device Type (Fortinet FortiGate 200F (1U)), Description, Airflow (Front to rear), Serial Number (ABC123), and Asset Tag. To the right of the table is a 'Management' section with fields: Status (Active), Role (Firewall), Platform (FortiOS), Primary IPv4 (10.88.236.10), and Primary IPv6. Below this is a 'Services' section with 'None' and an '+ Add Service' button. At the bottom is a 'Contacts' section.

netbox

Search

twan

Devices > Antwerp

R08-FW01

Created 2023-03-31 15:55 · Updated 0 minutes ago

+ Add Components Clone Edit Delete

dcim.device:92

Device Interfaces 30 Console Ports 1 Power Ports 2 Config Context Status LLDP Neighbors Config Journal Changelog

Device

Region	—
Site	Antwerp
Location	First floor
Rack	R08
Position	U30 / Front
Tenant	—
Device Type	Fortinet FortiGate 200F (1U)
Description	—
Airflow	Front to rear
Serial Number	ABC123
Asset Tag	—

Management

Status	Active
Role	Firewall
Platform	FortiOS
Primary IPv4	10.88.236.10
Primary IPv6	—

Services

None

+ Add Service

Contacts

Initial run

```
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync % python netbox_zabbix_sync.py -vjH  
2023-03-31 18:25:49,245 - Netbox-Zabbix-sync - DEBUG - Found group Antwerp/Fortinet/Firewall for host R08-FW01.  
2023-03-31 18:25:49,247 - Netbox-Zabbix-sync - DEBUG - Found template ID 10186 for host R08-FW01.  
2023-03-31 18:25:49,661 - Netbox-Zabbix-sync - INFO - Created host R08-FW01 in Zabbix.  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %
```

Is a host still in-sync?

```
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync % python netbox_zabbix_sync.py -vjH  
2023-03-31 18:26:41,097 - Netbox-Zabbix-sync - DEBUG - Found group Antwerp/Fortinet/Firewall for host R08-FW01.  
2023-03-31 18:26:41,098 - Netbox-Zabbix-sync - DEBUG - Found template ID 10186 for host R08-FW01.  
2023-03-31 18:26:41,181 - Netbox-Zabbix-sync - DEBUG - Device R08-FW01: hostname in-sync.  
2023-03-31 18:26:41,181 - Netbox-Zabbix-sync - DEBUG - Device R08-FW01: template in-sync.  
2023-03-31 18:26:41,181 - Netbox-Zabbix-sync - DEBUG - Device R08-FW01: hostgroup in-sync.  
2023-03-31 18:26:41,181 - Netbox-Zabbix-sync - DEBUG - Device R08-FW01: status in-sync.  
2023-03-31 18:26:41,181 - Netbox-Zabbix-sync - DEBUG - Device R08-FW01: interface in-sync.  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %
```

Some data gets modified

```
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync % python netbox_zabbix_sync.py -vjH  
2023-03-31 19:13:47,836 - Netbox-Zabbix-sync - DEBUG - Found group Antwerp/Fortinet/Firewall for host R08-FW02.  
2023-03-31 19:13:47,837 - Netbox-Zabbix-sync - DEBUG - Found template ID 10186 for host R08-FW02.  
2023-03-31 19:13:47,926 - Netbox-Zabbix-sync - WARNING - Device R08-FW02: hostname OUT of sync. Received value: R08-FW01  
2023-03-31 19:13:48,015 - Netbox-Zabbix-sync - INFO - Updated host R08-FW02 with data {'host': 'R08-FW02'}.  
2023-03-31 19:13:48,081 - Netbox-Zabbix-sync - DEBUG - Device R08-FW02: template in-sync.  
2023-03-31 19:13:48,082 - Netbox-Zabbix-sync - DEBUG - Device R08-FW02: hostgroup in-sync.  
2023-03-31 19:13:48,082 - Netbox-Zabbix-sync - DEBUG - Device R08-FW02: status in-sync.  
2023-03-31 19:13:48,082 - Netbox-Zabbix-sync - DEBUG - Device R08-FW02: interface in-sync.  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %
```

Cleaning up

```
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync % python netbox_zabbix_sync.py -vjH  
2023-03-31 18:27:43,093 - Netbox-Zabbix-sync - INFO - Deleted host R08-FW01 from Zabbix.  
2023-03-31 18:27:43,155 - Netbox-Zabbix-sync - INFO - Cleaned up host R08-FW01.  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %
```

Journal

Devices > Antwerp

R08-FW01

Created 2023-03-31 15:55 · Updated 0 minutes ago

dcim.device:92

+ Add Components ▾

📄 Clone

✎ Edit

🗑 Delete

Device

Interfaces 30

Console Ports 1

Power Ports 2

Config Context

Journal 2

Changelog

Created	Created by	Kind	Comments	
2023-03-31 16:27	twan	Warning	Deleted host from Zabbix	✎ ▾
2023-03-31 16:25	twan	Success	Created host R08-FW01 in Zabbix.	✎ ▾

Per Page ▴

Showing 1-2 of 2


Virtual chassis

Virtual Chassis

R08-SW01

Created 2023-03-31 15:41 · Updated 35 minutes ago

dcim.virtualchassis:7

 Clone

 Edit

 Delete

Virtual Chassis

Journal

Changelog

Virtual Chassis

Domain —

Master [R08-SW01-0](#)

Description —

Tags

No tags assigned

Members

Device	Position	Master	Priority
R08-SW01-0	1	✓	15
R08-SW01-1	2		10

[+ Add Member](#)

Comments

None

What happens now?

```
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync % python netbox_zabbix_sync.py -vjHc  
2023-03-31 18:31:49,888 - Netbox-Zabbix-sync - DEBUG - Found group Antwerp/Fortinet/Firewall for host R08-FW01.  
2023-03-31 18:31:49,890 - Netbox-Zabbix-sync - DEBUG - Found template ID 10186 for host R08-FW01.  
2023-03-31 18:31:50,301 - Netbox-Zabbix-sync - INFO - Created host R08-FW01 in Zabbix.  
2023-03-31 18:31:50,405 - Netbox-Zabbix-sync - DEBUG - Device R08-SW01-0 is primary cluster member. Modifying hostname from R08-SW01-0 to R08-SW01.  
2023-03-31 18:31:50,405 - Netbox-Zabbix-sync - INFO - Device R08-SW01 is part of cluster and primary.  
2023-03-31 18:31:50,480 - Netbox-Zabbix-sync - INFO - Added hostgroup 'Antwerp/Juniper/Switch'.  
2023-03-31 18:31:50,555 - Netbox-Zabbix-sync - DEBUG - Found group Antwerp/Juniper/Switch for host R08-SW01.  
2023-03-31 18:31:50,556 - Netbox-Zabbix-sync - DEBUG - Found template ID 10190 for host R08-SW01.  
2023-03-31 18:31:51,068 - Netbox-Zabbix-sync - INFO - Created host R08-SW01 in Zabbix.  
2023-03-31 18:31:51,166 - Netbox-Zabbix-sync - DEBUG - Device R08-SW01-1 is non-primary cluster member.  
2023-03-31 18:31:51,166 - Netbox-Zabbix-sync - INFO - Device R08-SW01-1 is part of cluster but not primary. Skipping this host...  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %  
(venv_netbox) twan@Twans-MacBook-Pro netbox-zabbix-sync %
```

Hostgroups

<input type="checkbox"/>	Name ▲	Hosts	Templates	Members
<input type="checkbox"/>	Antwerp/Fortinet/Firewall	Hosts 1	Templates	R08-FW01
<input type="checkbox"/>	Antwerp/Juniper/Switch	Hosts 1	Templates	R08-SW01

<input type="checkbox"/>	Name ▲	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status
<input type="checkbox"/>	R08-FW01	Items 3	Triggers 3	Graphs	Discovery	Web	10.88.236.10:161		ICMP Ping	Enabled
<input type="checkbox"/>	R08-SW01	Items	Triggers	Graphs	Discovery 1	Web	10.88.236.1:161		Interfaces SNMP	Enabled

Under the hood

Devices > Antwerp

R08-FW01

Created 2023-03-31 15:55 · Updated 2 minutes ago

Device

Interfaces 30


Console Ports 1

Power Ports 2

Config Context

Status

Device

Region	—
Site	Antwerp
Location	First floor
Rack	R08 
Position	U30 / Front
Tenant	—
Device Type	Fortinet FortiGate 200F (1U)
Description	—
Airflow	Front to rear
Serial Number	ABC123
Asset Tag	—

Custom Fields

Zabbix hostid	10543
---------------	-------

Netbox custom link

Templates

```
{% if obj.cf["zabbix_hostid"] %}Show host in Zabbix{% endif %}
```

Jinja2 template code for the link text. Reference the object as `{{ object }}`. Links which render as empty text will not be displayed.

```
https://ShowingThisAtAConferenceSoundsLikeAPrettyStupidIdea.local  
/zabbix.php?action=latest.view&hostids[]={ obj.cf["zabbix_hostid"] }
```

dcim.device:92

Add Components ▾

Clone

Edit

Delete

Show host in Zabbix

[Changelog](#)

Open source

- <https://github.com/TheNetworkGuy/netbox-zabbix-sync>



Thank you for your attention

