

ZeroTouch automated solution with MS7000

Automating MS7000 configuration with ZeroTouch

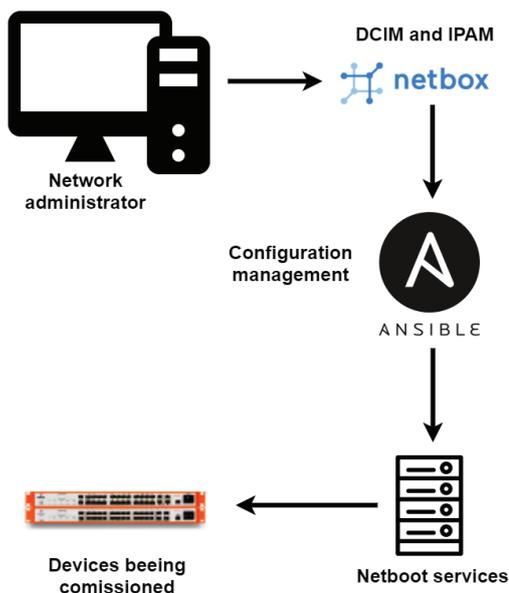
Waystream access switches power some of the largest city networks in Europe. An important function in an easy to operate network is automated deployment.

Automation saves time and reduce human errors in the provisioning process.

Waystream customer Wexnet has based their automation solution on open-source tools NetBox and Ansible together with the Miradot Zerotouch solution.

Wexnet city network

Wexnet operates a city network in the Småland county of Sweden. The network covers the municipalities of Växjö, Alvesta, Tingsryd and Lessebo and connects apx. 35 000 households to the world. Yet, the operator maintains a lean organisation with a high degree of automation of the network.



- Using automation tools for the deployment and configuration of our network equipment we gain several advantages. The network can be deployed faster, there are fewer errors in the configuration and with integration to self-service portals the end-users can select and activate services themselves. Auto-

mation allows us to keep a small organisation despite the large number of customers in our network and geographical distribution of the switches, says Jacob Lundstedt, Wexnet's Network Architect.

Using the MS7000

As of 2020 Wexnet is deploying Waystreams MS7000 series of switches to connect end-users. A prerequisite was to integrate the MS7000 into the ZeroTouch provisioning solution from Miradot that Wexnet uses.

- With ZeroTouch we are able to reduce the time we spend on provisioning the switches with up to 85% and fewer configuration mistakes are made which also saves time and unhappy customers. With the solution we bring the MS7000 directly as it arrived from Waystream into the installation site, hook it up and connect the power and uplinks. No preconfiguration is needed. The switch will automatically get its system configuration from ZeroTouch and our field technician do not need to do any on-site configuration either. It works like a charm, Mr. Lundstedt explains.

Miradot ZeroTouch

- The combination of ZeroTouch and Waystream MS7000 is perfect. It helps us run a very lean network operation, and its a reliable solution.

ZeroTouch is a multi-vendor provisioning solution from Miradot that uses an open API to also support integration with IP address management and data center infrastructure management systems such as the open-source tool Netbox. With integrated DHCP support and firmware management the ZeroTouch can control what IP address and firmware to run on each switch. In addition it is configured via the Ansible automation tool.

About the MS7000

Designed for street cabinets and central-office

- Temperature hardened -20 to +70C
- AC and DC power options
- All connectors in the front
- Small form-factor, 24 cm deep

High availability and long deployment life

- Redundant power inputs
- Front to side/back airflow
- 1 Gbit/s over fiber
- 10Gbit/s uplinks

Unique FTTH feature-set

- Zero-touch deployment
- Telemetry upload to InfluxDB
- Quality analysis of TV

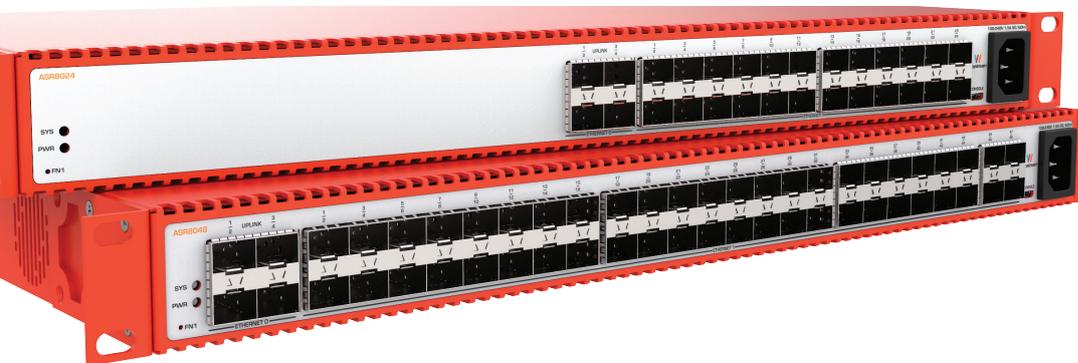
Complete service support

- Network processor powered advanced QoS and rate-limiting
- Bitstream / wholesale
- Ingress/egress shaping with WFQ
- Ingress/egress policing
- Access-list

About ZeroTouch

Automated provisioning flow

- Multi-vendor provisioning
- Open API
- DHCP support
- Firmware management
- Integration with Netbox
- Integration with Ansible





Using Netbox for inventory

The solution combines several different tools to create an automated deployment and configuration process.

The network team pre-defines the site and the devices to be connected there in the network inventory system, Netbox. This creates a database of the equipment in the network which is important for documentation and maintenance of the infrastructure.

The Waystream switch is added as a device and the key parameters for management IP and hostname is defined in the Netbox database. In addition a pointer to the default system configuration template is added.

In the case of Wexnet there are about 10 different profiles that might be applied depending on the actual use-case and model of the switch, such as if the switch has 24 or 48 ports.

Using Ansible to render configuration

Ansible is then used to render the actual system configuration for the switch based on the template and information in Netbox.

When the switch is connected in the network, it sends BOOTP packets which are intercepted by ZeroTouch that then determines which configura-

tion file to download into the switch. The solution renders a complete system configuration including both generic base configuration and unit specific changes completely automatically.

About the MS7000

The MS7000 is a series of switches, with 24 or 48-port 1 Gbit/s Ethernet ports and four 10Gbit/s SFP+ uplinks, designed for fiber broadband networks to deliver data, voice and video services.

The MS7000 runs Waystream iBOS operating system, a feature rich and reliable software that provide advanced service features such as ingress/egress shaping with Weighted Fair Queuing. IBOS also features streaming telemetry and built-in service assurance capabilities such as analysis of multicast TV and connectivity check. Various layer 2 features support public and private networks, wholesale and redundant networking for building highly available FTTH networks for business and residential users.

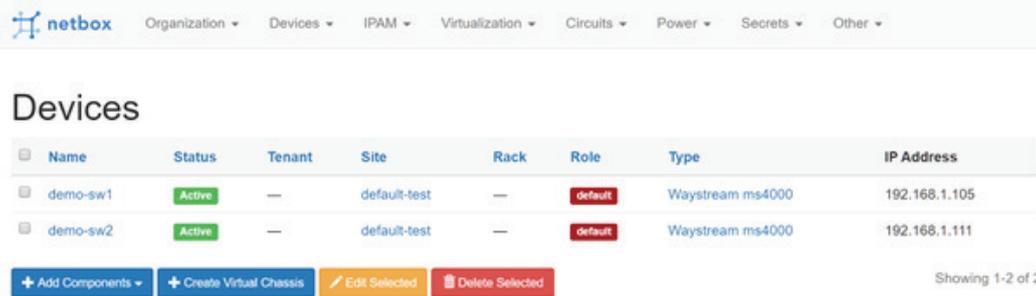
Built in a small form factor with unique front to side airflow, the MS7000 is a reliable platform for service delivery over many years of operation. Extended temperature versions supporting -20 to +70 degree C allow deployment into harsh installation environments and all connectors in the front provides easy access.

Waystream contact

sales@waystream.com

www.waystream.com

Tel +46 8 56 26 95 50



Miradot

Specialists in datacenter and service provider networks. With experience from having built automation for datacenters with 14 000 physical servers, automation systems for service providers and completed migration projects with thousands of customers. Solid experience around DevOps and application operations.

www.miradot.se



Ansible

RedHat Ansible is an open-source IT automation solution. Ansible is a simple automation language that can perfectly describe an IT application infrastructure. It's easy-to-learn, self-documenting, and doesn't require a grad-level computer science degree to read.

www.ansible.com



Netbox

NetBox is an open source web application designed to help manage and document computer networks. NetBox was developed specifically to address the needs of network and infrastructure engineers. It includes IP address management, equipment rack organization, devices and connections, virtual machine inventory.

<https://github.com/netbox-community/netbox>