

AD-DA.ca, Netgear AV Line

Description

Control and monitoring of Netgear AV Line managed switches (M4250 and M4350 series) from Q-SYS, over the switch's HTTPS API on port `4443`.

The plugin logs in to the switch, then polls it every 3 seconds. It shows the state of every port on a front-panel view, reads the switch information, and lets the design change port descriptions, VLANs, frame sizes, port and PoE enables, the system name and the fan mode. Its MAC monitor finds devices on the switch by their MAC address and can move their port to a VLAN automatically.

The Q-SYS Core must reach the switch on HTTPS port `4443`. Use a user account dedicated to the plugin, created in the switch's main UI under the security tab: keep the admin account for the switch's web interface. The `Model` property must match the model reported by the switch exactly, otherwise the plugin stops at `Wrong Model`.

Key Features

- **Front-Panel View** — Every port of the selected model with its VLAN colour, link state and PoE power at a glance
- **25 Models** — M4250 and M4350 lineups, from 10 to 52 ports, RJ45 and SFP ports drawn apart
- **Port Control** — Description, untagged VLAN, frame size, port enable and PoE enable for each port
- **Switch Information** — Model, system name, serial number, MAC address, firmware, uptime, CPU, memory and PoE usage
- **MAC Monitor** — Finds devices by full or partial MAC address and reports the port they are on
- **Auto VLAN** — Moves the port of a found device to the VLAN chosen for it
- **Save and Reboot** — Save the running configuration and reboot the switch from Q-SYS

Release Notes

2024-10 : 1.3.0.0

New Feature

- Added M4350 lineup

2024-06 : 1.2.2.6

Bug Fixes

- Fixed an issue where the poe usage display a wrong value.

Properties

License

Type: `string`

Default Value: *(empty)*

Description: License key of the primary Q-SYS Core. Not needed in emulation.

License Backup

Type: `string`

Default Value: *(empty)*

Description: License key of the backup Q-SYS Core, for a redundant design.

Mac Monitor Count

Type: `integer`

Min: `4`

Max: `48`

Default Value: `4`

Description: Number of MAC addresses on the Mac Monitor page.

Model

Type: `enum`

Choices: see the table below

Default Value: `M4250-10G2F-PoE+`

Description: Model of the switch. It sets the number of ports of the plugin and the layout of the Device View page. It must be the model the switch reports.

► Models

Controls

Status

Controls name: `Status`

Type: `Indicator-Status`

Pin Style: `Output`

Pin Name: `Status`

Description: Displays the plugin's connection state.

OK - Connected

OK - Disconnected

Fault - Wrong Credentials

Fault - Wrong Model

Fault - Wrong License Key

- `Connected`: the switch accepted the login, polling is running.
- `Disconnected`: shown while the plugin logs in, and when the switch cannot be reached. A failed request while connected logs in again. A login the switch does not answer is not retried until `IP`, `Username` or `Password` changes.
- `Wrong Credentials`: the switch refused the user name or password. The plugin stops until a connection control changes.
- `Wrong Model`: the switch is not the model set in the `Model` property. The plugin stops reading it.
- `Wrong License Key`: neither `License` nor `License Backup` matches this Q-SYS Core.

A change sent to the switch pauses polling until the switch answers it. If the switch does not answer within about 90 seconds, the plugin logs in again.

Device View Page

Port

Controls name: `PortInfo 1` ... `PortInfo <n>`

Type: `Button-Trigger`

Pin Style: `Input` / `Output`

Pin Name: `Ports~Info <n>`, or `Ports~Device View <n>` for the 16-port M4350, 20, 24, 28, 30 and 40-port models

Description: One button per port, laid out like the switch's front panel and labelled with the port number. RJ45 ports have rounded corners, SFP ports square ones. The fill is the colour of the

port's VLAN on the switch. The outline is grey when the link is down, green when the link is up and blue when the port is powering a device over PoE. Pressing it has no effect.

Device Info Page

Save

Controls name: DeviceSave

Type: Button-Trigger

Pin Style: Input / Output

Pin Name: Deve~Save

Description: Saves the switch's running configuration, so that the changes made from Q-SYS survive a reboot of the switch.

Reboot

Controls name: DeviceReboot

Type: Button-Trigger

Pin Style: Input / Output

Pin Name: Deve~Reboot

Description: Reboots the switch.

In version 1.3.1.0, Reboot raises a script error and the switch is not rebooted. Reboot it from its own interface.

Model

Controls name: DeviceInfo.model

Type: Indicator-Text

Pin Style: Output

Pin Name: Device~Model

Description: Model reported by the switch.

System Name

Controls name: DeviceInfo.name

Type: Text

Pin Style: Input / Output

Pin Name: Device~System Name

Description: System name of the switch. A new name is sent to the switch.

Serial Number

Controls name: DeviceInfo.sn

Type: Indicator-Text

Pin Style: Output
Pin Name: Device~Serial Number
Description: Serial number of the switch.

Base MAC Address

Controls name: DeviceInfo.mac
Type: Indicator-Text
Pin Style: Output
Pin Name: Device~Base MAC Address
Description: Base MAC address of the switch.

AV UI Version

Controls name: DeviceInfo.avuiVer
Type: Indicator-Text
Pin Style: Output
Pin Name: Device~Base MAC Address
Description: Version of the switch's AV user interface.

Firmware Version

Controls name: DeviceInfo.fwVer
Type: Indicator-Text
Pin Style: Output
Pin Name: Device~Firmware Version
Description: Firmware version of the switch.

Boot Version

Controls name: DeviceInfo.bootVer
Type: Indicator-Text
Pin Style: Output
Pin Name: Device~Boot Version
Description: Boot code version of the switch.

System Uptime

Controls name: DeviceInfo.upTime
Type: Indicator-Text
Pin Style: Output
Pin Name: Device~System Uptime
Description: Time since the switch last started, as the switch reports it.

PoE Usage

Controls name: DeviceInfo.poeUsage

Type: Knob-Percent

Pin Style: Output

Pin Name: Device Info~PoE Usage

Description: Power drawn by PoE devices, as a percentage of the PoE power the switch can supply. Only read from a switch with PoE.

CPU Usage

Controls name: DeviceInfo.cpuUsage

Type: Knob-Percent

Pin Style: Output

Pin Name: Device Info~CPU Usage

Description: CPU usage of the switch.

Memory Usage

Controls name: DeviceInfo.memoryUsage

Type: Knob-Percent

Pin Style: Output

Pin Name: Device Info~Memory Usage

Description: Memory usage of the switch.

Fan Mode

Controls name: FanMode

Type: Text (combo box)

Pin Style: Input / Output

Pin Name: Device Info~Fan Mode

Description: Fan mode of the switch: Off, Quiet or Cool. A new mode is sent to the switch.

PoE

Controls name: DeviceInfo.poe

Type: Indicator-Led

Pin Style: Output

Pin Name: DeviceInfo.poe

Description: On when the switch supports PoE. Not shown on the page. PoE usage and the PoE controls of the Ports page are read only while it is on.

Temperature Sensors

Controls name: TemperatureSensor.State 1 ... 4, TemperatureSensor.Desc 1 ... 4, TemperatureSensor.Temp 1 ... 4

Type: Indicator-Text

Pin Style: Output

Pin Name: same as the controls name

Description: Reserved for the switch's temperature sensors. Not shown on the page and not updated in this version.

The switch information is read when the plugin connects, then every 30 seconds.

Ports Page

One block per port of the model, in port order.

Port

Description

Controls name: PortDescription 1 ... PortDescription <n>

Type: Text

Pin Style: Input / Output

Pin Name: Port~Description <n>

Description: Description of the port on the switch. A new description is sent to the switch.

Vlan

Controls name: PortVlan 1 ... PortVlan <n>

Type: Text (combo box)

Pin Style: Input / Output

Pin Name: Port~Vlan <n>

Description: VLAN ID of the port (its PVID). The choices are the VLANs configured on the switch. Choosing one adds the port to that VLAN as an untagged member. Disabled on trunk ports.

Color

Controls name: PortColor 1 ... PortColor <n>

Type: Indicator-Led

Pin Style: Output

Pin Name: Port~Color <n>

Description: Colour of the port's VLAN, as set on the switch.

Frame Size

Controls name: PortFrameSize 1 ... PortFrameSize <n>

Type: Knob-Integer

Pin Style: Input / Output

Pin Name: Port~Frame Size <n>

Description: Maximum frame size of the port, from 1500 to 9198 bytes. A new size is sent to the switch.

Link State

Controls name: PortState 1 ... PortState <n>

Type: Indicator-Led

Pin Style: Output

Pin Name: Port~Link State <n>

Description: On when the port's link is up.

Enable

Controls name: PortEnable 1 ... PortEnable <n>

Type: Button-Toggle

Pin Style: Input / Output

Pin Name: Port~Enable <n>

Description: Administrative state of the port. Off shuts the port down.

PoE

PoE Power

Controls name: PortPoeState 1 ... PortPoeState <n>

Type: Indicator-Text

Pin Style: Output

Pin Name: Port~Description <n>

Description: Power the port delivers, in watts (6.5 W). Empty on a port without PoE.

PoE Enable

Controls name: PortPoeEnable 1 ... PortPoeEnable <n>

Type: Button-Toggle

Pin Style: Input / Output

Pin Name: Port~PoE Power <n>

Description: Enables PoE on the port. Disabled on the ports that have no PoE.

PortPoeState and PortDescription share the pin name Port~Description <n>: tell them apart by their controls name in the Control Pins list.

Changes made from Q-SYS go to the switch's running configuration. Press Save on the Device Info page to keep them after a reboot of the switch.

Mac Monitor Page

The MAC monitor reads the switch's LLDP neighbour table every 3 seconds and reports on which port each MAC address is found. Only devices that advertise themselves over LLDP are found, as

Q-SYS devices do.

Enable

Controls name: MonitorEnable

Type: Button-Toggle

Pin Style: Input / Output

Pin Name: Mac Monitor~Enable

Description: Turns the MAC monitor on.

Excluded Ports

Controls name: MonitorExcludedPorts

Type: Text

Pin Style: Input / Output

Pin Name: Mac Monitor~Excluded Ports

Description: Port numbers the monitor ignores, separated by spaces or commas. By default, the SFP ports of the model. Exclude the uplinks to other switches, where many devices are seen.

Mac Address

Controls name: MonitorMac 1 ... MonitorMac <n>

Type: Text

Pin Style: Input / Output

Pin Name: Mac Monitor~Mac Address <n>

Description: MAC address to look for, upper or lower case. A partial address finds every device that contains it: 00:60:74 finds every QSC device. When several devices match, the last one found is reported. Empty rows are skipped.

Auto Vlan

Controls name: MonitorVlan 1 ... MonitorVlan <n>

Type: Text (combo box)

Pin Style: Input / Output

Pin Name: Mac Monitor~Vlan <n>

Description: VLAN given to the port where the device is found. The choices are the VLANs configured on the switch, or empty to leave the port's VLAN as it is. When the device is found on a port of another VLAN, the port is moved to this VLAN as an untagged member.

Port Num

Controls name: MonitorPort 1 ... MonitorPort <n>

Type: Indicator-Text

Pin Style: Output

Pin Name: Mac Monitor~Port Number <n>

Description: Port on which the device is found. Empty when it is not found.

Found

Controls name: MonitorFound 1 ... MonitorFound <n>

Type: Indicator-Led

Pin Style: Output

Pin Name: Mac Monitor~Found <n>

Description: On when the device is found on a port that is not excluded.

With Auto Vlan, a device found on an uplink moves the uplink's VLAN. Keep every uplink in Excluded Ports.

Setup Page

IP Address

Controls name: IP

Type: Text

Pin Style: Input / Output

Pin Name: Connection~IP

Description: IP address or host name of the switch.

Username

Controls name: Username

Type: Text

Pin Style: Input / Output

Pin Name: Connection~Username

Description: User name of the switch account used by the plugin.

Password

Controls name: Password

Type: Text

Pin Style: Input / Output

Pin Name: Connection~Password

Description: Password of that account. It is shown in clear text on the page.

Changing IP, Username or Password logs in again at once. Create a user dedicated to the plugin in the switch's main UI, under the security tab, so the admin user keeps access to the switch's web interface.