USER MANUAL

NGSME9AVB

9-port stackable AVB/Milan switch



niveoprofessional.com

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Introduction

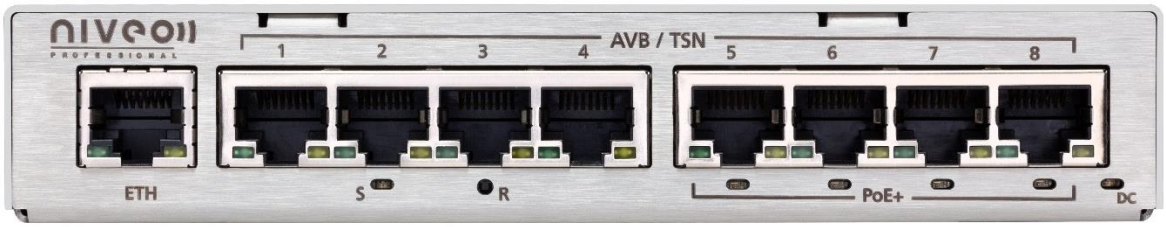
Niveo Professional introduces the brand new NGSME9AVB switch, offering a ready -out of the box- AVB switch that also supports Dante and PoE+. The switch requires no configuration or difficult firmware uploads, nor any payment or activation of AVB license fees. Just unbox, plug-in and relax.

The switch can be expanded to an 18-port design with a simple expansion cable.
With a simple command, you can add or remove ports to the Dante-VLAN or the AVB-VLAN.
The industrial design and specifications, make this the most durable AVB-switch on the market.

Quick Installation Guide

The NGSME9AVB switch is designed to minimize the need for configuration. Just unbox and plug-in and the configuration is done.

Front Panel



The ‘ETH’ port is a network port that can be used for Dante or networking and is configured to be a separate VLAN from the AVB ports.
Ports 1-8 offer AVB/Milan connectivity, with ports 5-8 also offering PoE+

Rear Panel



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1: Power input connector - DC input range 48VDC/54VDC 3A max.

2: Management Ethernet port 1000BASE-T w/o AVB capability. For service only, not for user.

3: SFP 2500BASE-X port (SGMII) for cascading two NGSME9AVB switches.

* Shield/frame - connect to PE

Using the switch

- Start up the switch by connecting the power adaptor to the 48/54VDC port of the switch and to the power outlet.
- Wait 30 seconds for the switch to fully start up
- Connect the AVB-devices directly to ports 1-8, with PoE-powered devices to ports 5-8.

Stacking the switch

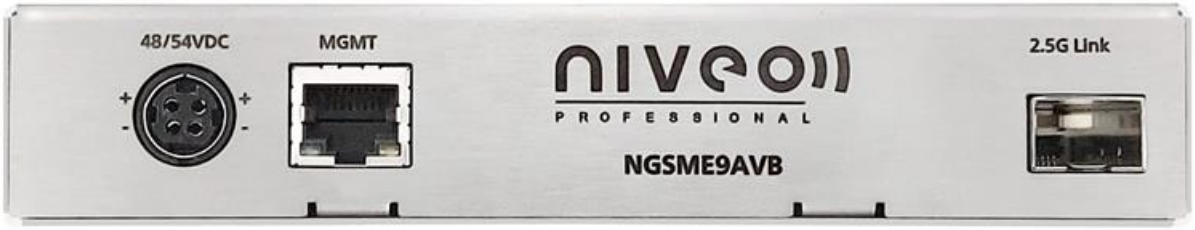
For stacking the switch, please use the recommended Niveo Professional NRS-D10G1 (10G SFP+ Passive DAC Cable 0,5M) to connect two switches on the '2.5G Link' ports.

Advanced settings

Configuration tool for Niveo Professional NGSME9AVB

Download the tool from the website:
https://niveoprofessional.com/product/ngsme9avb-2/
The tool must run under Windows.

The notebook must be connected to the mgt port at the rear side of the switch and the notebook IP address must be set to 10.0.0.x (excluding 10.0.0.2).



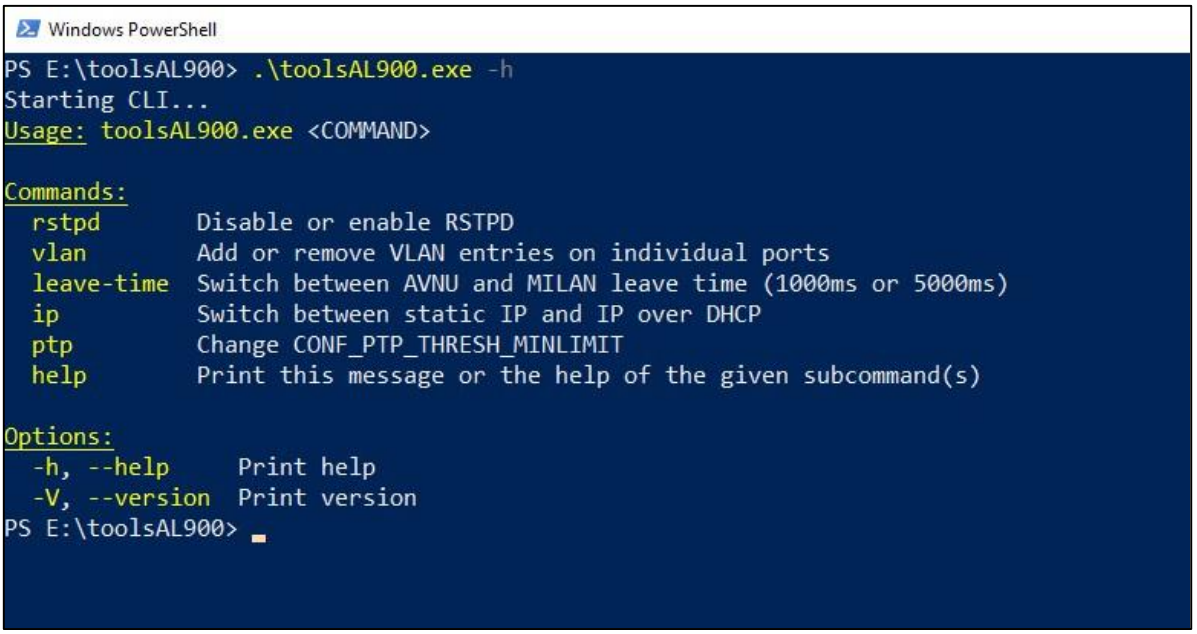
Mgt port uses 10.0.0.2 as fixed IP address. Avoid using the same IP address elsewhere in the network, the mgt port is connected to.

The Tool can be used in a Windows PowerShell or similar.

With Windows PowerShell:

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Change directory to the folder including the toolsAL900.exe executable.
To display all possible commands:
>.\toolsAL900.exe -h



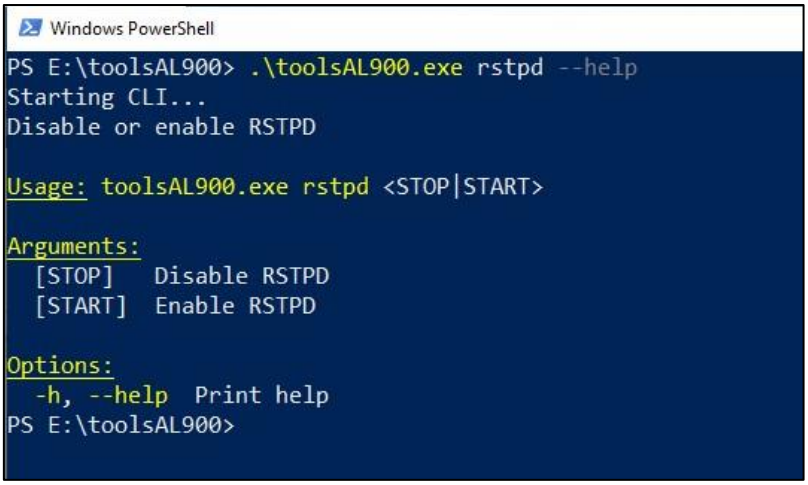
Overview of commands:

command	option	description
rstpd	stop	stops rstpd service until the next reboot
	start	starts rstpd service
vlan	add	adds VLAN with vlan_id to port
	remove	removes VLAN with vlan_id from port
leave-time	avnu	changes leave-time to be AVNU compliant (1000ms)
	milan	changes leave-time to be MILAN compliant (5000ms)
ip	stat	switches to static ip address on eth1
	dhcp	switches to dhcp on eth1 (default)
ptp	zero	sets ptp minlimit to 0ns
	default	sets ptp minlimit to default value

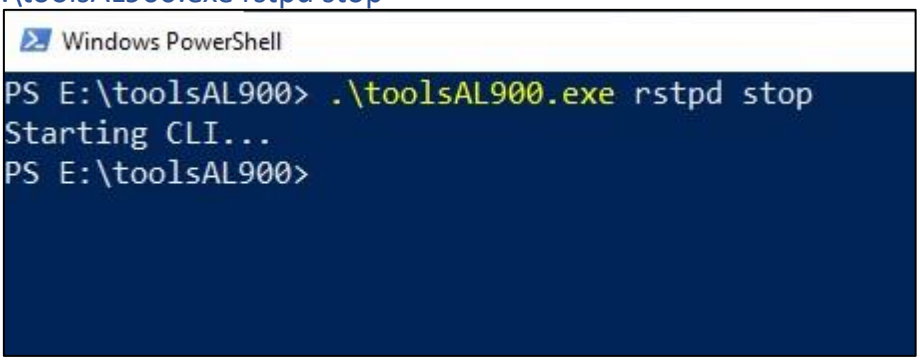
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RSTP

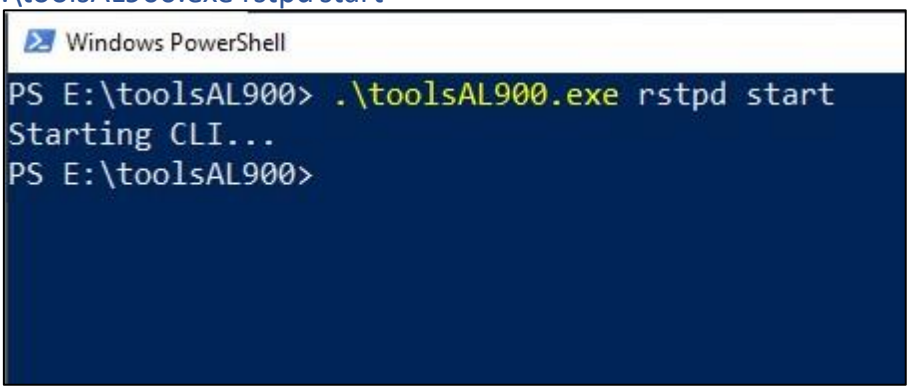
.\toolsAL900.exe rstpd



.\toolsAL900.exe rstpd stop



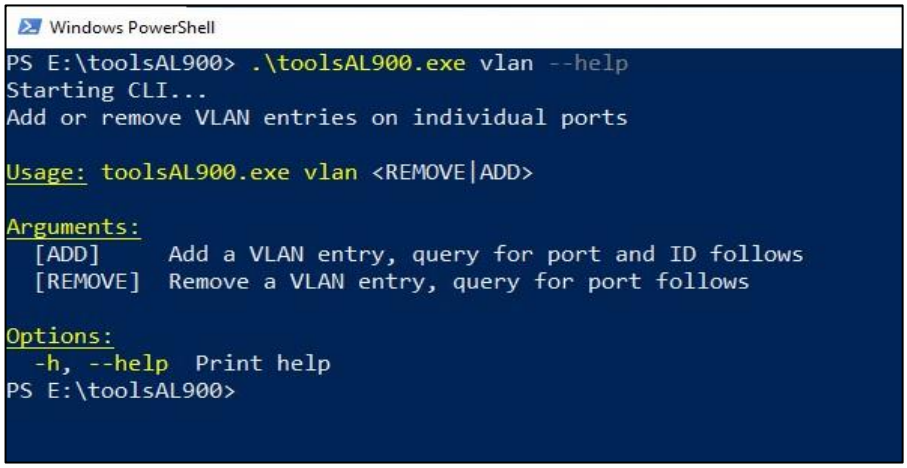
.\toolsAL900.exe rstpd start



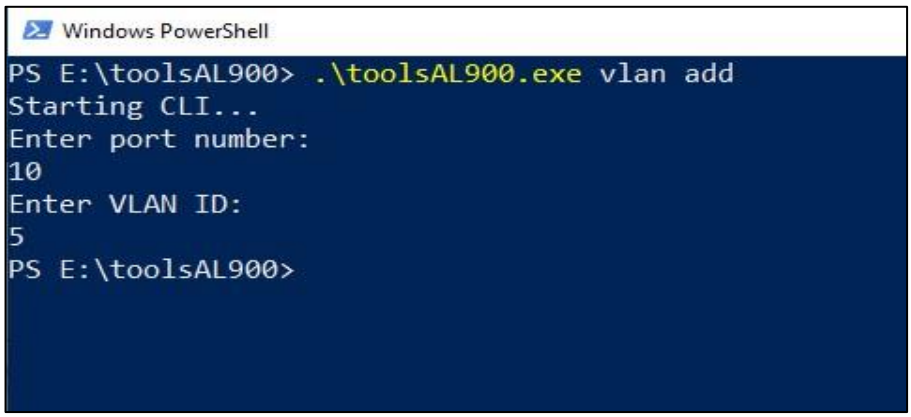
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VLAN

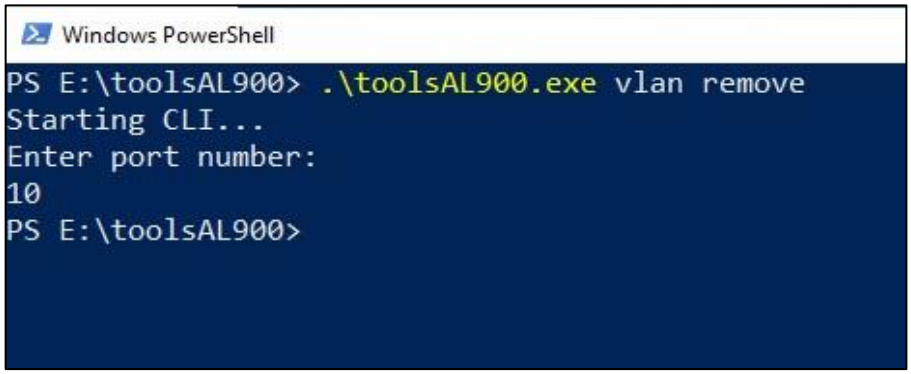
.\toolsAL900exe vlan



.\toolsAL900.exe vlan add



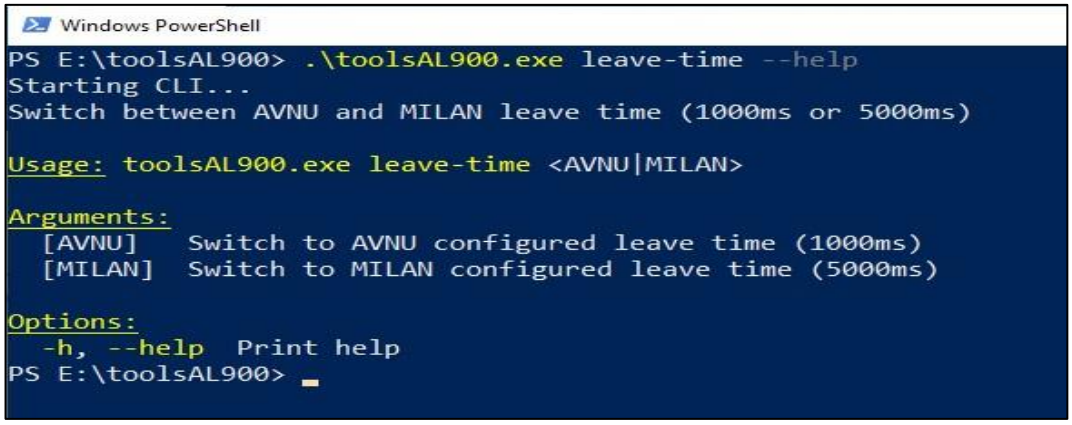
.\toolsAL900.exe vlan remove



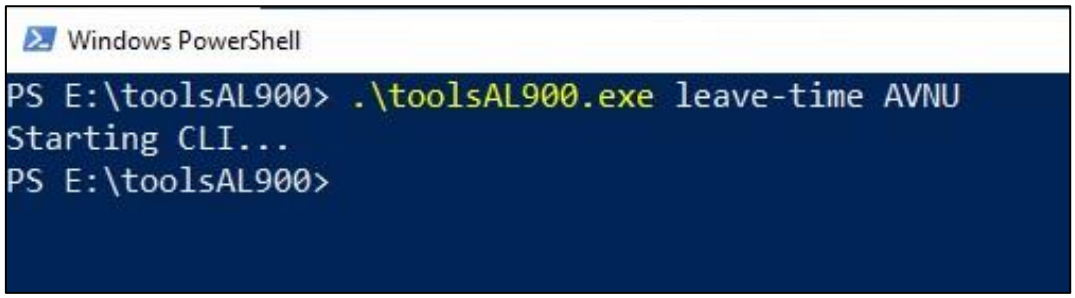
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Leave-time

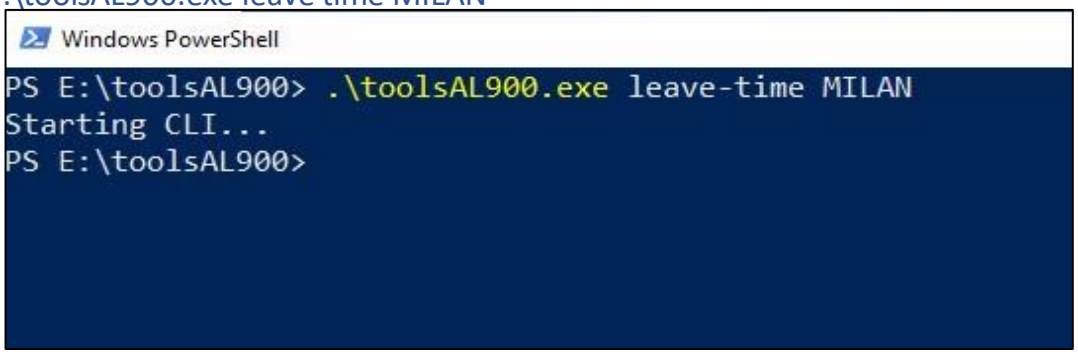
.\toolsAL900.exe leavetime



.\toolsAL900.exe leave -time AVNU



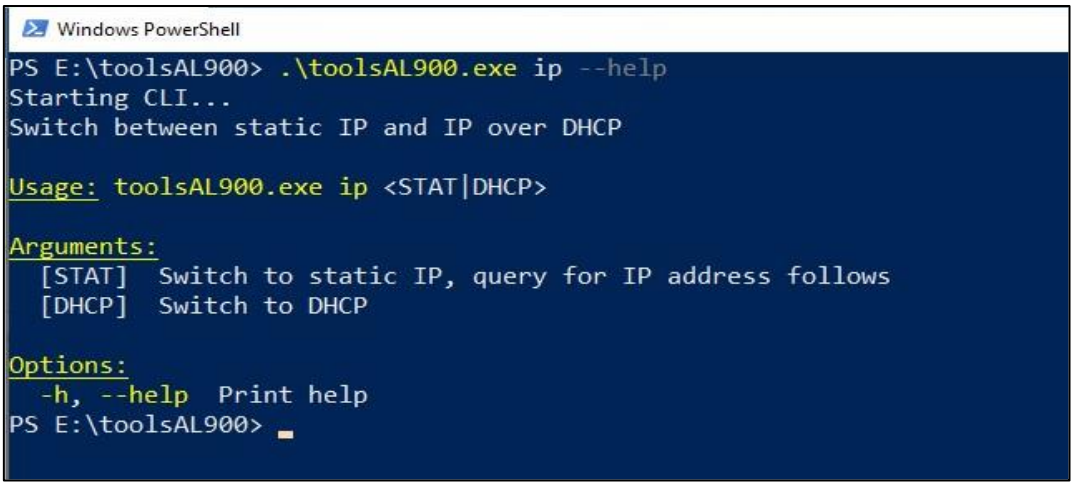
.\toolsAL900.exe leave-time MILAN



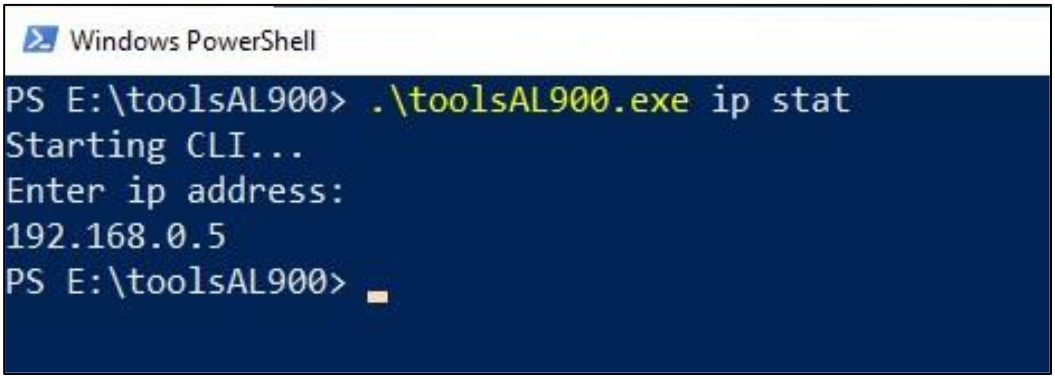
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IP address

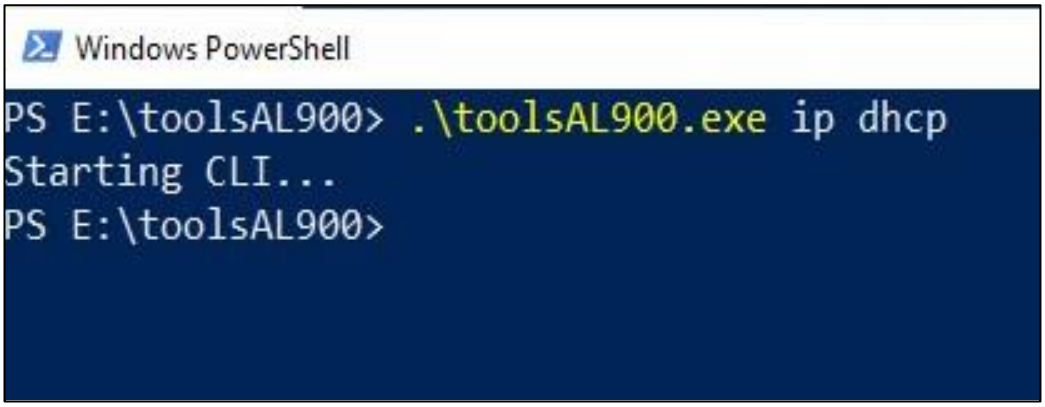
.\toolsAL900.exe i p



.\too lsAL900.exe ip stat



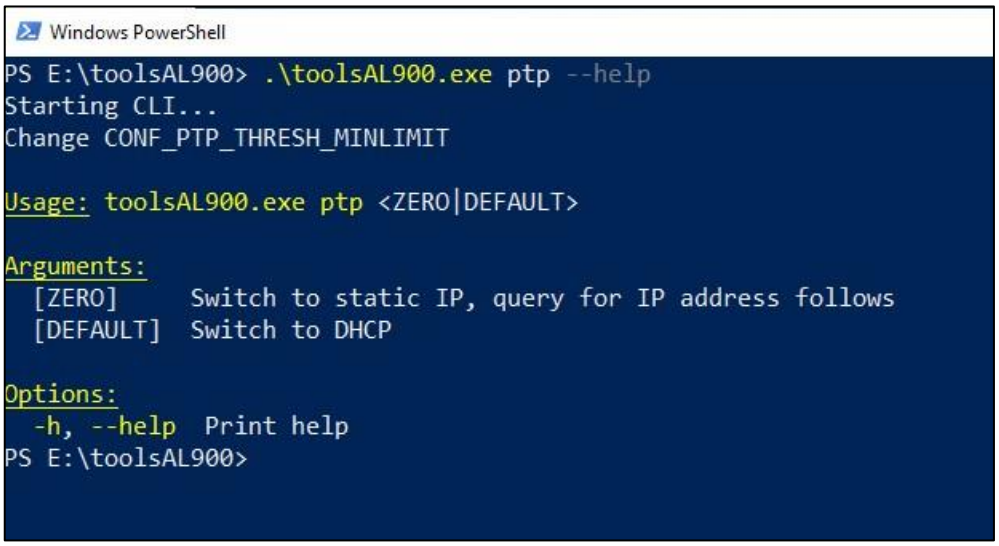
.\tools AL900.exe ip dhcp



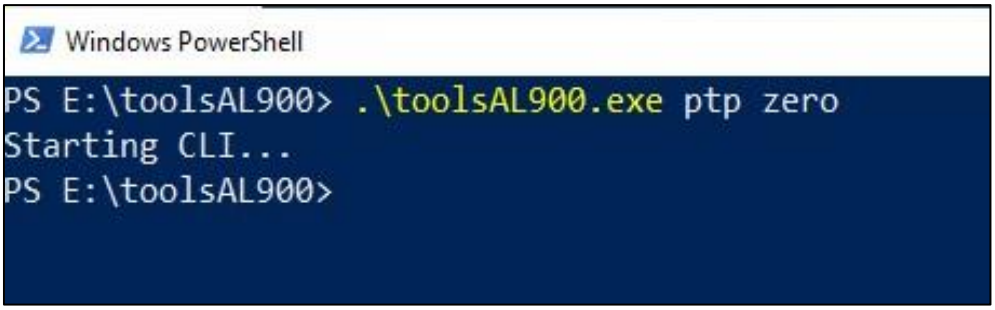
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PTP minimum threshold

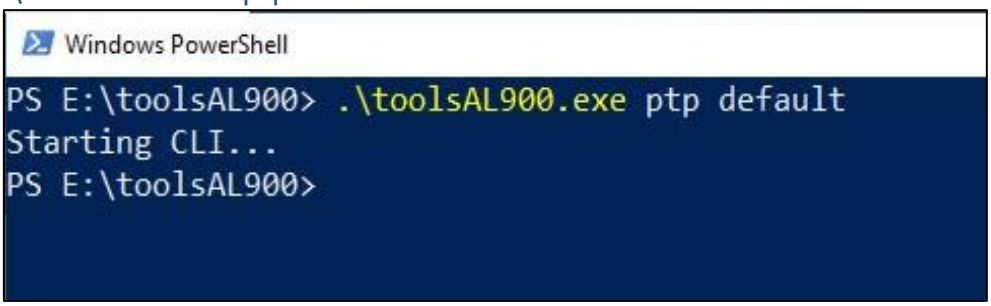
.\toolsAL900.exe ptp



.\toolsAL900.exe ptp zero



.\toolsAL900.exe ptp default



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Specifications

General

- 1000BASE-T Ethernet desktop switch box
- 9 x RJ45 Gigabit Ethernet front connectors
- 4 x 802.3at PoE+ (up to 30W/port)
- PoE+ support up to 120W in total
- 1 x SFP 2500BASE-X rear connector

- Self-managed operation, or ARM® V8 CPU management support
- Protocol options e.g. AVB & VLAN

- Dimensions: 160mm (W) x 35mm (H) x 146mm (D)
- Metal case VA steel
- Desktop 4-pos. circular power adapter connector
- Nominal 48VDC/54VDC power input operation

Front Panel I/O

- 9 x RJ45 Ethernet front connectors in total (AVB ports 1-8, ETH)
- 4 x RJ45 PoE+ Ethernet connectors (ports 5-8)
- 5 x RJ45 Ethernet connectors (AVB ports 1-4, ETH)
- 1000BASE-T, 100BASE-TX, 10BASE-T compliant data transfer rate

Rear I/O

- 1 x SFP 2500BASE-X (AVB switch interconnect)
- 1 x RJ45 Ethernet connector (CPU management) 1000BASE-T, 100BASE-TX, 10BASE-T
- 1 x Power jack 4-pos. circular receptacle

Power Requirements

- DC Input, 44V-57V (48VDC, 54VDC), 3A max.
- Power consumption 135W max. (@120W external load)
- Fast acting chip fuse (PCB soldered type - no replacement on-site)
- Protected against reverse polarity
- ESD protection (TVS)
- Common mode input filter
- Rear power connector (desktop supply 4-pos. circular connector)

Gigabit Ethernet Switch

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- Front ports GbE MAC/PHY 1000BASE-T
- 4 x RJ45 connectors PoE+
- 5 x RJ45 connectors w/o. PoE+
- 1 x SFP 2.5Gbps
- High performance, non-blocking, Gigabit Ethernet
- Support for up to 16K MAC addresses, 10KByte Jumbo Frames
- Supports 802.1 Audio Video Bridging (AVB) Gen 2
- Time Sensitive Networking (TSN) Standards*, IEEE 1588v2 one-step PTP
- Synchronous Ethernet*
- Quality of Service (QoS) support with 8 traffic classes
- Supports 4096 802.1Q VLANs, three levels of 802.1Q security
- Unmanaged solution or management *

Software

- Webserver (Firmware Updates & Settings)
- AVB/TSN Stack:
- IEEE 802.1Q-2011 - Qav (FQTSS) & Qat (SRP)
- IEEE 802.1AS-2011 - Time Synchronization (PTPv2)
- DANTE (including clock synchronization and stream reservation), static VLAN configurable via web interface
- VLAN *
- ProAV Certified AVNU® Switch/Bridge device
- ProAV Certified MILAN® Bridge (configuration via Web interface)

* The switch's software stack supports MMRP, MSRP, MVRP, but for compliance with the required behavior of AVNU, only MVRO and MSRP are enabled in configuration. AVNU specification requires MMRP to be disabled.

Power over Ethernet

- 4 x RJ45 PoE+ enabled front ports
- PSE PoE+ according to IEEE 802.at
- Maximum power delivered per port 30W
- Maximum power delivered in total 120W
- PSE Type 2 mode A (power over RJ45 pins 1/2 & 3/6, 600mA)

Applications

- General industrial networking, Real-Time/TSN, machine vision & monitoring
- Infotainment/professional audio/video - AVB/Dante™/Milan®

Environmental, Regulatory

- Designed & manufactured in Germany
- ISO 9001 certified quality management

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- Long term availability
- Rugged solution
- RoHS compliant
- Operating temperature 0°C to +70°C (commercial temperature range)
- Storage temperature -40°C to +85°C, max. gradient 5°C/min
- Humidity 5% ... 95% RH non condensing
- Altitude -300m ... +3000m
- Shock 15g 0.33ms, 6g 6ms
- Vibration 1g 5-2000Hz
- EC Regulatory EN55035, EN55032, EN62368-1 (CE)
- FCC approved (FCC ID 2A36S-AL900)
- MTBF 68.6 years

Accessories

NRS-D10G1	10G SFP+ Passive DAC Cable 0,5M

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builds Network and Power products for AV and Security integrators, designed by and supported with AV and Security integrators.
Our aim is to make Network and Power as good as it can be with the application in mind. Selected proven technologies, combined with a range of proprietary feature, built with the best available chipsets and components make these products stand out against all its peers. The unparalleled support make it a class on its own!

Niveo Professional offers products in the following categories:

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SDVoE ready switches



AVB/Milan Switches



Business Switches



Fiber Optic Accessories



UPS Systems



PDU's



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