

PANOS
Process Automation
Network Operating System

Software Release Notes



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Software Details

Software Name:	PANOS Process Automation Network Operating System
Release Version:	1.3.0.3087
Release Date:	27/Jun/2024
Description:	Firmware for Ethernet-APL Switches

1. Software Version 1.3.0.3087

1.1 Supported Products

- ARS*-*-*

1.2 New Features

- Ethernet port mirroring
- Temperature stress diagnostics and lifetime prognostics
- Configuration backup of another switch can be imported as a baseline configuration for the switch
- Communication statistics of “Dev” is added to data history
- SFP physical layer data is added to Snapshots and Physical layer page of the web interface if diagnostic is supported by the selected SFP module
- Maintenance required alarms are provided for SFP TX/RX power and TX bias current if diagnostic is supported by the selected SFP module
- PROFINET port configuration can be ignored to allow disabling of ports if the DCS system does not handle port settings over PROFINET

1.3 Changed Features

- Tag handles strings with non-ASCII characters
- Action buttons are sticky at the bottom of the web interface pages
- “IN discards” added to snapshot
- Web interface keeps local settings like event log filters when page is reloaded

1.4 Bug Fixes

- Snapshot creation fails if a connected device has invalid characters in its LLDP information
- Web interface may show "Login error" instead of a waiting screen while login is temporary blocked because of too many failed login attempts
- Data history may show no data if user is switching fast between several ports
- Switch may reboot while a network loop is present



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- Data history may show wrong spur voltage and current while a network loop was present
- sysObjectID of SNMP MIB-2 does not use a Pepperl+Fuchs ID
- HTTP and HTTPS port may be set to same value what is not allowed
- Value history may not show all available data when full data and reduced data must be shown for the selected time range
- Loading of backups from newer firmware version on switches with older firmware versions is not prevented but not supported
- Web interface local settings like event log filters are persistent between different users

2. Software Version 1.2.2.2875

2.1 Supported Products

- ARS*-*-*

2.2 New Features

- Diagnostic data for SFP-3 and SFP-4 is provided

2.3 Changed Features

- Some outdated TLS key exchange algorithms, used by HTTPS connections, are not supported any more
- Unused functions are removed from PFDCP protocol
- Pepperl+Fuchs Discovery and Configuration Tool (PFDCT) can show NE107 status and active IO connection for the switches
- User is explicitly warned before executing a function that interrupts operation of IO AR or switching (e.g. firmware update)
- TLS 1.0 and TLS 1.1 support is removed, switches configured to use one of these deprecated versions will use TLS 1.2 after a firmware update
- Minimum supported versions of web browser changed to:
 - Microsoft Edge ≥ 79
 - Google Chrome ≥ 67
 - Mozilla Firefox ≥ 68
 - Apple Safari ≥ 14
 - Apple Safari for iOS ≥ 14

2.4 Bug Fixes

- Creation date and time of imported configurations is always 0
- Jitter or Signal level alerts can be reported for PROFIBUS PA devices if they are configured on PROFINET but not connected to the switch



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- A snapshot may show a PROFIBUS device as connected to the switch if it is configured on PROFINET but currently not connected to the switch
- If multiple PROFIBUS master access specific data like I&M data at the same time some commands may fail
- Ethernet statistic for P1-P4 may show too small values when running for a long time
- If specific invalid PROFINET frames are sent to the switch the firmware may crash and the switch reboots
- Switch is providing its services more stable at certain high network loads
- Automatic logout stays disabled if a browser tab is restored and if it was disabled in this tab, even if the user had to login again
- Data history may record or show wrong min/max values for lower zoom levels
- Data history may show wrong values for compressed data at zoom levels below the compression interval
- Disabling/enabling of Ethernet ports using PROFINET Dynamic Reconfiguration failed

3. Software Version 1.2.1.2639

3.1 Supported Products

- ARS*-*-*

3.2 New Features

- None

3.3 Changed Features

- None

3.4 Bug Fixes

- Switch may automatically reboot after about 4 weeks of operation

4. Software Version 1.2.0.2628

4.1 Supported Products

- ARS*-*-*

4.2 New Features

- Network communication load and communication error rates for Ethernet ports
- Communication statistics for PROFIBUS PA
- History of measured diagnostic data
- Snapshots of diagnostic data can be recorded and exported
- Event log capturing all alerts and other important events
- Alert reporting to a PROFINET controller (DCS alarming) can be disabled without disabling alerts shown at the web interface and FDI package
- Diagnostic shows hints about disabled or acknowledged alarms and disabled DCS alarming
- Status of the bulk power supply connection is shown at the diagnostics details of the device

4.3 Changed Features

- Input for SNMP community strings checks for allowed values
- Document download is only available for authenticated users
- Precision of fieldbus signal measurement is improved for some field devices
- Link up time of APL field devices is improved
- The connected devices list shows a port even if the connected device cannot be identified
- Setting of ident number selector for PROFIBUS PA devices is shown
- The connected PROFIBUS PA device and the expected device type configured from an PROFINET IO Controller are shown separately
- All ports of a group can be enabled or disabled at once

- CPU load display is moved to the diagnostics details of the device

4.4 Bug Fixes

- Some 3rd party switches may disturb SNMP communication
- Enabling SNMP may require a restart of the switch to make SNMP work
- When adding new user accounts SNMP needs a restart of the switch to be able to use the account for SNMP connections
- SNMP showed a wrong ifSpeed value (kbit/s instead of bit/s)
- A bouncing PROFIBUS PA device may interrupt PROFIBUS PA communication for other devices
- When replacing a fieldbus device by another type within 10 seconds after it was connected the new devices may not start up reliable
- Spur link LED may flash shortly even if there is no link
- An ESD pulse while a field device is connected to the topmost spur of a row at an ARS ic may stop communication of all 4 ports of this row until the switch is rebooted
- After generating a new HTTPS certificate in the device HTTPS communication may fail until the switch is rebooted
- After a restart the name of an HTTPS certificate is not shown any more
- When two PROFINET IO controllers try to access the device at the same time the PROFINET communication may fail
- The FDB (MAC) table page may need a very long time if several hundred entries shall be shown
- Device firmware may fail in seldom cases if devices with more than one IP or unmanaged switches are connected to a port of the switch
- During establishing of a link at a Spur the statistic may count some wrong IN discards

5. Software Version 1.1.2.2329

5.1 Supported Products

- ARS*-*-*

5.2 New Features

- Pepperl+Fuchs SFP modules SFP-3 and SFP-4 are supported
- PROFINET DCP Pruning is supported
- Web interface of switch supports multiple user accounts
- User levels are supported for user accounts of web interface

5.3 Changed Features

- During "locate device" function the Ethernet Port Status LEDs P1 to P4 flash only
- Physical layer information (e.g. FX, LX, SX) removed for SFP modules since information is not provided reliable from SFP modules
- PROFINET coupling to PROFIBUS PA. Fieldbus Access Points are moved to a separate slot for better DCS compatibility
- Disabled ports are not shown at network statistics any more

5.4 Bug Fixes

- PCS-7 and PROFINET Dynamic Reconfiguration: If a PROFIBUS PA device is added and at the same time another parameter is changed, the connection to the switch restarts unintended
- If the user name includes non ASCII characters the login may fail
- Web interface may show "No certificate is available" for HTTPS certificates even if a certificate is available

6. Software Version 1.1.1.2224

6.1 Supported Products

- ARS*-*-*

6.2 New Features

- ARS Ex ia switches are supported
- FDI Packages can be downloaded from switch web server
- Supported APL Port Profiles types are added to GSDML file
- Support for PROFINET fiber optic information structures added

6.3 Changed Features

- Minor improvements of SNMP tables to support full PROFINET compatibility
- PROFINET and DCP can be enabled and disabled independently
- On PROFINET configured, but inactive PROFIBUS PA devices are not shown as connected devices anymore
- PROFIBUS PA device parameter Device Type is renamed to Order ID
- PROFIBUS PA device information like Tag is updated when the value changes instead of every 24h

6.4 Bug Fixes

- Generic PROFIBUS PA device can't be used because of wrong description in GSDML file
- CFG_Fault from PROFIBUS PA devices is reported wrongly as PRM_Fault
- SNMP and HTTP(S) settings cannot be changed if the respective protocol is enabled/disabled by a PROFINET AR
- 100BASE-T connection between two ARS switches may fail in rare cases
- A very high number of PROFINET alarms may result in a firmware crash
- Condensed status cannot be enabled for some PROFIBUS PA Profile 3.02 devices

- Switch may crash when a network loop is present
- Stability improved under PROFINET Network Load Class 3 conditions
- Switch replacement with ABB DCS failed in some cases
- PROFINET conformance test PD_DEV check failed

7. Software Version 1.1.0.1991

7.1 Supported Products

- ARS*-*-*

7.2 New Features

- PROFINET Dynamic Reconfiguration is supported
- Support for FDI Package (Starting with FDI Package Version 1.1)
- Support for FIMlet (Starting with FIMlet Version 1.1)
- PA Profile condensed status is supported for PROFIBUS PA Field Devices
- Web interface shows PA Profile Version for PROFIBUS PA Fieldbus Devices
- Supported Ident Numbers for PROFIBUS PA Field Devices are read from the devices
- Qualified Channel Diagnosis with qualifiers according to PA Profile 4.02 is supported
- Pepperl+Fuchs MIO supported profile ident numbers are added to the PN-GSD file

7.3 Changed Features

- New Layout of PROFINET Startup Parameters for simpler usage
- RJ-45 Port speed is limited to 100MBit/s if PROFINET is enabled
- SFP Modules are not plug able any more for PROFINET Configuration but fixed ports
- Long formats for parameterization of PROFIBUS PA Fieldbus Devices are removed from PN-GSD file
- The web interface shows information about connected PROFIBUS PA Fieldbus Devices more user friendly

- Diagnosis concept is reworked to follow 2017 update of NE107 (Out of Specification has lowest priority and is not used any more)
- MAU Type for Spur ports is changed to 10BASE-T1L

7.4 Bug Fixes

- PROFINET can crash if a PROFIBUS PA Fieldbus Device continuously enters data exchange and falls out again for several days
- PROFIBUS C2 connections may fail when idle for several days
- Locate function (LED flashing) of device stops after 5s even if still enabled
- While a spur is in short circuit diagnosis message may toggle between two different diagnostic messages
- Web browser may cache old files from device web interface. Browser cache should be cleared once after Firmware update
- Congestion loss may happen for PROFINET high priority frames when switch is fully utilized

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