Technical Guide

PROFINET

Feature Overview and Configuration Guide

Introduction

PROFINET is a field bus open standard for data communication over Industrial Ethernet. Profinet control and complexity exceeds older field bus systems like Modbus.

You can use the Profinet Protocol suite to manage an industrial network and associated equipment. At its most basic, it allows a **Controller** to control, manage, and monitor industrial equipment across a network. Profinet is standardized and promoted by a consortium of manufacturers acting as part of the Profinet International organisation. The PI consortium standardizes the protocol(s) and publishes them as open standards, in conjunction with the IEC (International Electrotechnical Commission) standards body and also requires certification of devices adhering to the standards.

The IE340 Series of industrial Ethernet switches, are classed as **Input/Output** (IO) devices. The IE340 Series switches manage network connectivity and notify the Controller of any issues. A Controller (typically a PLC in an industrial network), can determine the IP address, name of an IO device, as well as request and set different alarms to be notified if links/ports change state.

The Profinet Protocol suite interacts with and also specifies custom settings and profiles for other protocols. Amongst these are MRP, SNMP, and LLDP as well as using base 802.1Q facilities.

Profinet has different conformance classes for required features.

The AlliedWare Plus™ implementation is:

- for an IO device with Conformance Class B (CC-B), which requires port configuration, alarms, SNMP, LLDP support, and optional MRP support.

Products and software version that apply to this guide

This guide applies to AlliedWare Plus IE340 Series switches running software version 5.5.3-0 or later.

Related documents

The following document give more information about Profinet on AlliedWare Plus products:

- The product's Command Reference

This document is available from the link above or on our website at alliedtelesis.com

Contents

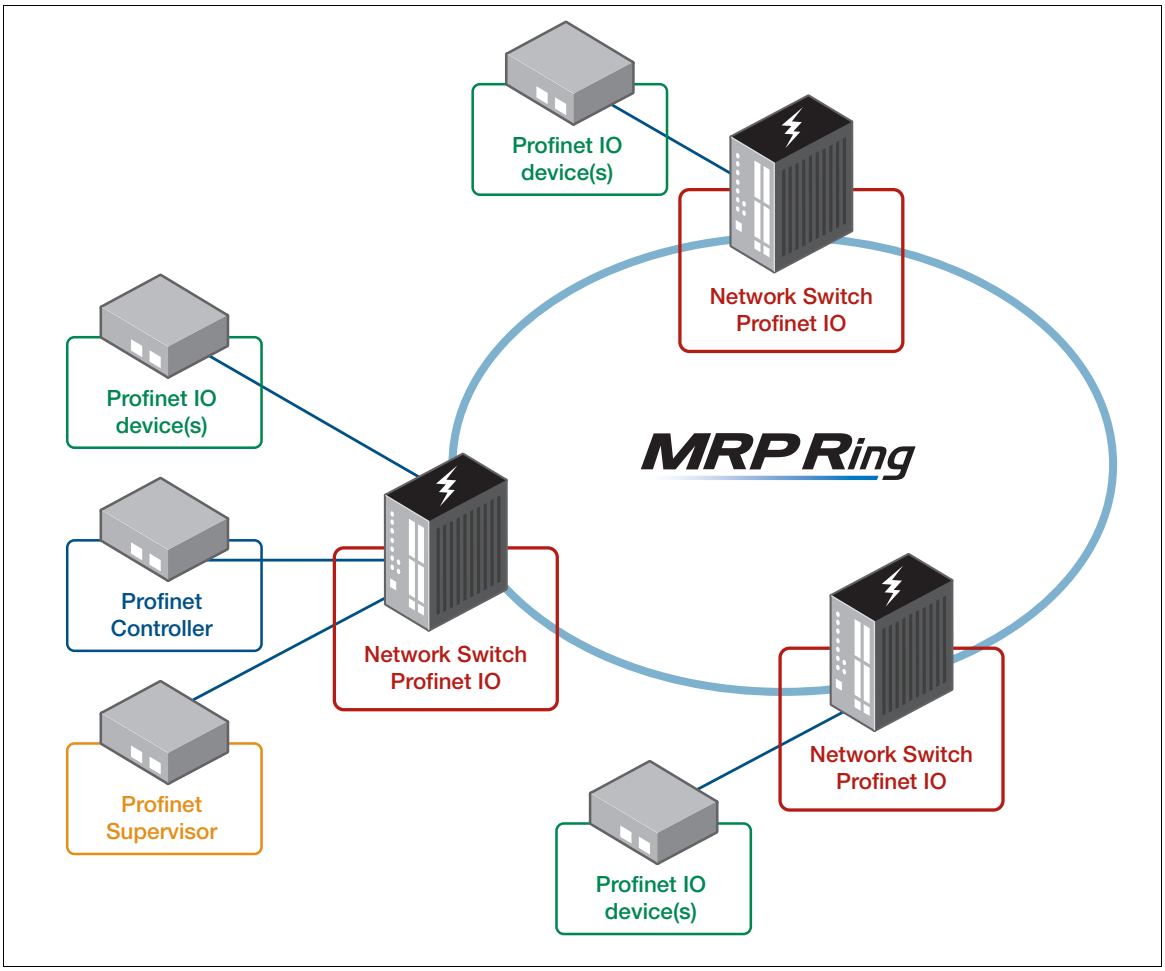
Overview of Profinet

You would most likely use Profinet if you are setting up a network with other Profinet devices, and you are using a Profinet Controller (hardware or software) to manage the network and its devices. This would allow you to manage and monitor of all the devices (if they are Profinet enabled) on the network.

Profinet controllers use the Discovery and basic Configuration Protocol (DCP), to discover and configure IP/StationName attributes on network devices. Profinet uses Link Layer Discovery Protocol (LLDP) to detect and monitor neighboring network devices. The neighboring network devices transmit specialized Profinet TLVs which allow the Controller to track neighbors, MRP rings, port (interface) statistics and states.

There is a specified subset of SNMP that Profinet also uses to query network state and information from Profinet IO nodes.

The Profinet protocol itself can control the state of ports (in the same way it may control other specialized machinery) and set alarms to track changes of state in the network.



Understanding AlliedWare Plus and Profinet

To use Profinet, you need to understand the way in which Profinet networks are specified and configured as a whole. Specifically, AlliedWare Plus does not implement Profinet's network control standards.

Profinet is designed to manage configuration by an external Controller or Supervisor. However, on an AlliedWare Plus device that supports Profinet, you first need to start the Profinet service and then enable the VLAN that Profinet is using to communicate to the Controller and the rest of the Profinet network.

Beyond this most basic information, the Controller will manage the rest of the Profinet configuration settings. If you wish to use Media Redundancy Protocol (MRP) functionality, then that service will also need to be started.

Limitations

The General Station Description (GSD) file, is a machine readable format for Profinet controllers. It defines which AlliedWare Plus features are supported on devices. The GSD file also defines specific technical Profinet capabilities. For more information on GSD files, see: "General Station Description (GSD) files" on page 6.

The AlliedWare Plus implementation:

- is for an IO device with Profinet Conformance Class B, which requires port configuration, alarms, SNMP, LLDP support, and optional MRP support.
- supports one MRP ring for network redundancy. MRP interconnection is not supported.
- does not provide IO control/status to the external relays.
- currently supports only one instance of Profinet.

Using Profinet

Profinet allows you to configure and monitor your AlliedWare Plus device over a Profinet network via a Profinet Controller. The GSD file for the variant is loaded into the Controller and specifies the device's structure and supported features.

The Controller can then:

- discover AlliedWare Plus devices on the network.
- configure the station-name, IP address, and subnet mask.
- configure network ports - admin state, speed, duplex and polarity.
- monitor network ports - link state, traffic counters, and configuration.
- discover devices connected to the AlliedWare Plus device.
- configure and receive various alarms from the AlliedWare Plus device.
- configure MRP ring - domain-ID, role (manager|client), and ring ports.
- monitor MRP ring state - open, closed, ring-mismatch.
- reset the device back to factory configuration.

Persistent storage

Profinet requires some attributes of internal device data to be made 'persistent'. This allows the control engineer to uniquely identify or differentiate similar devices across the network. Any 'persistent' attributes marked by a Controller are restored on a reboot of the device. However, you can use the CLI to clear all persistent data set by the Profinet protocols, see "Clearing Profinet configurations" on page 9.

Profinet can change attribute configurations if they overlap with configurations that are handled by the usual AlliedWarePlus configuration methods i.e. CLI, AMF, Vista Manager etc.

For example, if a Profinet Controller specifies an IP address to be used, then that IP address would be configured on the appropriate Layer 3 (VLAN) interface and then could be saved using the standard AlliedWarePlus methods.

If however, the 'persistent' attribute is set for a more internal Profinet attribute or one that provides more detail than an existing AlliedWarePlus configuration, then those Profinet settings will not appear (or only partially appear) in any usual AlliedWarePlus configuration mechanisms.

An example of this might be a Profinet Controller setting specific individual timing settings for an MRP ring (which AlliedWarePlus usually sets only in MRP profiles). In this case, the settings would not be mapped onto the AlliedWarePlus CLI and the persistence nature would mean that previous settings are restored if the switch was reset.

General Station Description (GSD) files

The GSD file specifies device attributes for a Profinet Controller to use. It uses the GSDML format which is specified by the PI Association and contains XML-based language. The GSD file is loaded into a Profinet Controller to provide it with the definition of an AlliedWare Plus device.

The following highlights some of the relevant GSD file fields:

DeviceIdentity

This field identifies the vendor and device ID defined by the Profinet protocol.

```
!
<DeviceIdentity VendorID="0x05F9" DeviceID="0x001C">
!
```

- `VendorID`

  The vendor/manufacturer registered with the PI Association. In the association's Manufacturer ID table, the HEX number '0x05F9' equates to entry '1529', which is Allied Telesis.

- `DeviceID`

  The product family: '0x001C' is the Device ID for the IE340 Series.

DeviceAccessPointList

Each product family variant has an entry in the Device AccessPointList.

```
!
<DeviceAccessPointList> AddressAssignment="DCP;LOCAL" ... >
 ID="ID_IE340_20GP"
!
```

- `AddressAssignment`

- `ID`

  The variant ID for the entry 'item'. This example specifies the IE340 20GP product variant.

InterfaceSubmoduleItem

The InterfaceSubmoduleItem contains some overall configuration of the device.

```
!
<InterfaceSubmoduleItem ID="ID_IE340_20GP_Interface" ... >
 SupportedProtocols="SNMP;LLDP"
!
```

- `SupportedProtocols`

  The supported protocols. For example: SNMP and LLDP.

MediaRedundancy

MediaRedundancy is a child element of ‘Interface SubmoduleItem’.

```
!
<MediaRedundancy SupportedRole="Client;Manager"AdditionalProtocolsSupported="true"/>
!
```

- `SupportedRole`
  In this example, MRP ring operating in both client and manager is supported.
- `AdditionalProtocolsSupported`
  Informs the Controller that the device may be configured via another ring protocol. This is set as AWP and also supports both G.8032 and EPSR.

PortSubmoduleItem

For each variant, every port is listed as a PortSubmoduleItem.

```
!
<PortSubmoduleItem ID="IDS_1P1" ... >
!
```

- `SupportsRingportConfig`
  The port can be configured as an MRP ring by the Controller.
- `PortDeactivationSupported`
  The port can be shut down by the Controller.
- `LinkStateDiagnosisCapability`
  The Controller can check this port’s link state.

ParameterRecordDataItem

The sensor information is contained within a VirtualSubmoduleItem in a ParameterRecordDataItem. The individual sensors are detailed in a ‘ref’.

```
!
<ref allowedvalues="0 1 2" byteoffset="0" datatype="Unsigned8" defaultvalue="0"
textid="IDT_REF_Temp_System" valueitemtarget="IDV_Temp_System" />

<ref allowedvalues="0 1 2" byteoffset="1" datatype="Unsigned8" defaultvalue="0"
textid="IDT_REF_Voltage_Input1" valueitemtarget="IDV_Voltage_Input1" />
!
```

- `ByteOffset`
  The offset of the sensor value for the individual sensor in the ParameterRecordDataItem.
- `DataType`
  The format of the sensor value, in this case, an unsigned integer in a byte.
- `ValueItem ID / ValueItemTarget / textId`
  The sensor information.

Configuration examples

Basic configuration

The simplest configuration just requires the Profinet service to be started.

You can then optionally:

- start the MRP service to use in conjunction with Profinet. A connected Profinet Controller running the Profinet protocol can then be used to discover the device and to configure the Profinet interface IP address and station-name.
- change the VLAN Profinet operates on from the default VLAN1.

```
!
service profinet
service mrp
!
```

SNMP

We also recommend you setup SNMP access, as the Profinet specification provides for Controllers and Supervisors to use SNMP in conjunction with the Profinet proprietary methods to help manage a device.

```
!
snmp-server
snmp-server community public rw
snmp-server community private rw
!
```

STP and loop-protection

We recommend you disable both STP/RSTP and loop-protection.

```
!
spanning-tree mode rstp
no spanning-tree rstp enable
!
no loop-protection loop-detect
!
```

Unknown multicast traffic

We recommend you prevent the CPU from receiving unknown multicast traffic on the VLAN Profinet operates on.

```
!
interface vlan1
 cpu-protect unknown-multicast
!
```

DCP configuration

You can use the Profinet Controller and DCP to configure the station-name, Profinet interface IP address, and gateway.

The Controller can override any manual configurations without reference to the AlliedWare Plus CLI configured settings. If the Controller makes these settings ‘permanent’ (see the section about "Persistent storage" on page 5), then these will be restored on bootup by the Profinet process on the switch, again, without reference to any AlliedWare Plus bootup configuration.

You can manually configure the:

- default VLAN used by Profinet
- interface IP address and prefix
- default route on the interface prefix

```
!
interface vlan1
 ip address 203.0.113.5/24
!
ip route 0.0.0.0/0 203.0.113.1
```

Clearing Profinet configurations

Profinet supports persistent configuration, which is optionally used by a Profinet Controller to keep certain Profinet settings between reboots. When the Profinet service is started, if a setting is saved in persistent configuration, it will be re-loaded without reference to the standard AlliedWare Plus start-up configuration settings.

As persistent settings are stored and only managed by a Profinet controller across a network, there are some CLI commands you can use to help with re-purposing a device between controllers and networks.

To clear the existing Profinet persistent settings, use the command:

```
awplus# clear profinet persistent-storage
```

Sometimes this command is not enough.

The command **clear profinet full** clears all Profinet settings, persistent, hidden or CLI based. The command clears persistent storage (IP address, station-name, mrp settings), the configured Profinet VLAN, and also stops Profinet from running (the equivalent of the command: **no service profinet**).

This does not reboot the unit, it only changes the running configuration. For instance, having used this command, you could continue configuring a standard AlliedWare Plus configuration and save it before rebooting the device.

```
awplus# clear profinet full
```

The most complete clearance command is the generic AlliedWare Plus command **erase factory-default** (also the **atmf cleanup** command) which will remove all AlliedWare Plus configuration and clear the flash of all but the most basic files. This command can be used to clear everything back to the state the unit was set to when sent from the factory.

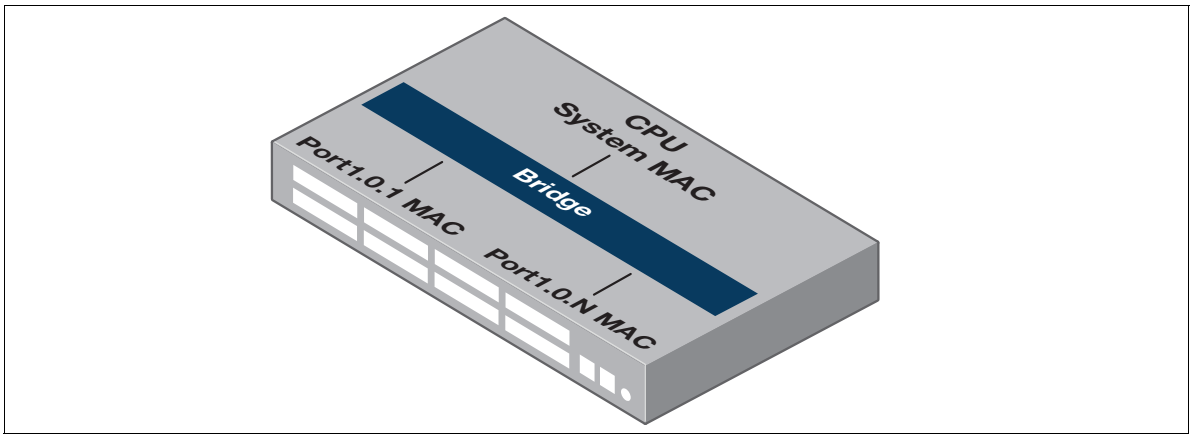
```
awplus# erase factory-default
```

```
awplus#erase factory-default
This command will erase all NVS, all flash contents except for
the boot release, a GUI resource file, and any license files,
and then reboot the switch.
Proceed ? (y/n):
```

Configuring the switch as an 802.1Q bridge using the mac-per-port feature

Profinet requires each device port to have a separate MAC address and a MAC address for the device itself. Profinet has its own protocols for looking up port/interface information as well as using SNMP and LLDP for topology discovery. This is why per-port MAC addresses are required with Profinet configurations.

This section describes how to configure a device as an 802.1Q bridge with a seperate MAC address for the interface, and a separate MAC address for each port.



Note: The mac-per-port feature is only available when Profinet is configured and running.

Feature overview

The mac-per-port feature works by assigning a generated series of MAC addresses to the ports. This gives them unique addresses, different to the system MAC address. These port addresses are used as the source address for Layer 2 protocols such as STP, LLDP, and MRP and can be looked up via SNMP. Layer 3 protocols are still accessed via the existing interface MAC address.

The feature configures incrementing MAC addresses on the switch ports using 802C 8.4.4.1 Extended Local Identifier (ELI) addresses.

These are generated using the following format:

```
Allied Telesis CID  00 00 CD
 With the Local bit set
 And Structured Local Address Plan (SLAP) quadrant 01 (ELI)
16 bits from platform mac-per-port id
8 bits for port
```

Example MAC addresses

The first three octets will always be the same, created from Allied Telesis CID with bits 0-3 set to 0xA for ELI. The ELI 0xA bits are 10 for Structured Local Address Plan (SLAP) quadrant 01, 1 for local administrated, and 0 for unicast.

mac-per-port	CID Slap ELI	Generated bytes	Port1.0.1	Port1.0.24
platform mac-per-port 0	0A 00 CD	00 00	0A 00 CD 00 00 01	0A 00 CD 00 00 16
platform mac-per-port 16262	0A 00 CD	3F 86	0A 00 CD 3F 86 01	0A 00 CD 3F 86 16
platform mac-per-port 48879	0A 00 CD	BE EF	0A 00 CD BE EF 01	0A 00 CD BE EF 16

Configuring this feature

The mac-per-port feature is enabled using the command:

```
awplus(config)#platform mac-per-port
```

```
awplus(config)#platform mac-per-port
% Save the config and restart the system for this change to take effect.
awplus(config)#end
awplus#wr
Building configuration...
[OK]
awplus#reboot
reboot system? (y/n):
```

You need a Profinet license to configure this mode. If you don't have one, you will see the following message after entering the **platform mac-per-port** command:

```
awplus(config)#platform mac-per-port
% MAC per port mode requires PROFINET feature license.
awplus(config)#
```

Monitoring the mac-per-port feature

Use the **show platform** command to see the MAC per port state. This displays the MAC per port ID generated when the command is run.

```
awplus# show platform
...
...
MAC per port id               12345
awplus#
```

Use the **show running-config** command to see the running configuration:

```
awplus#show running-config
....
!
platform mac-per-port 12345
!
```

Use the **show system mac** command to see the system MAC address:

```
awplus#show system mac
000c.252a.88fa
```

Use the **show interface** command to see the MAC address on individual ports:

```
awplus#show interface port1.0.1
....
  Hardware is Ethernet, address is 0a00.cdac.a301
....
```

Monitoring Profinet

There are a number of useful **show** commands available to monitor Profinet:

`awplus#show profinet status`

Displays the interface that the Profinet protocol is running on as well its network configuration.

```
awplus#show profinet status
Main interface: vlan1
IP : 192.168.1.2
Netmask: 255.255.255.0
CMINA
state : PF_CMINA_STATE_SET_NAME
Default station_name : ""
Perm station_name : ""
Temp station_name : ""
Default product_name : "Allied Telesis"
Perm product_name : "Allied Telesis"
Temp product_name : "Allied Telesis"
Default IP Netmask Gateway : 192.168.1.2 255.255.255.0 0.0.0.0
Perm IP Netmask Gateway : 192.168.1.2 255.255.255.0 0.0.0.0
Temp IP Netmask Gateway : 192.168.1.2 255.255.255.0 0.0.0.0
MAC : 00:0c:25:2a:89:03
awplus#
```

`awplus#show profinet sessions`

Displays application relationship connections from Profinet Controllers to a device. Individual connections can contain multiple communication relationships.

```
awplus#show profinet sessions

Connected Sessions
Session 1
----------
Number of IO CR's          2
Number of DiffModules      1
```

`awplus#show profinet interface`

Displays the port information held by Profinet. The output displays details on all the ports, individual ports cannot be specified. The example below shows two ports

```
awplus# show profinet interface

Ports
Port 1
 Port name : "port-001"
 ETH name : "port1.0.1"
 MAC : 00:0c:25:2a:89:03
 Link is up? : 0
 MAU Type : - (0x00)
 Peer check active : 0
 Peer check station name : ""
 Peer check port name : ""
 LinkCheck Active : 0
 Adjusts
 domain boundary active : 0
 multicast boundary active : 0
 MAU type active : 0
 link state active : 0
 peer 2 peer boundary active : 0
 DCP boundary active : 0
 preamble length active : 0
 MAU type extension active : 0
 fiber optic params active : 0
 Do not send LLDP : 0
 Peer info received : 0
 Peer chassis id : Valid 0 ""
 Peer port id : Valid 0 ""
 Peer port descr : Valid 0 ""
 Peer MAU type : Valid 0 - (0x00)
Port 2
 Port name : "port-002"
 ETH name : "port1.0.2"
 MAC : 00:0c:25:2a:89:03
 Link is up? : 0
 MAU Type : - (0x00)
 Peer check active : 0
 Peer check station name : ""
 Peer check port name : ""
 LinkCheck Active : 0
 Adjusts
 domain boundary active : 0
 multicast boundary active : 0
 MAU type active : 0
 link state active : 0
 peer 2 peer boundary active : 0
 DCP boundary active : 0
 preamble length active : 0
 MAU type extension active : 0
 fiber optic params active : 0
 Do not send LLDP : 0
 Peer info received : 0
 Peer chassis id : Valid 0 ""
 Peer port id : Valid 0 ""
 Peer port descr : Valid 0 ""
 Peer MAU type : Valid 0 - (0x00)
...
```

`awplus#show profinet alarm`

Displays a list of any alarms. These include events, temperature, and voltage alarms.

The example output below includes alarms for input ‘under voltage’. The channel entries reference which alarm, as defined in the GSD file.

```
awplus#show profinet alarm
DIAGNOSIS
Max: 200 items
Items in use: 2
[  0] USI: 0x8002  [Last]    Channel: 0x0003  Ch.error: 0x0002  Ext.error 0x0000
  Add.value 0x00000000 Qualifier 0x00000000
[  1] USI: 0x8002 Next:   0  Channel: 0x0002  Ch.error: 0x0002  Ext.error 0x0000
  Add.value 0x00000000 Qualifier 0x00000000
```

`awplus#show counter profinet`

Displays packets sent/received by the Profinet protocol.

```
awplus#show counter profinet

Profinet Counters
Tx success              ....... 1
Tx error                ....... 0
Rx success              ....... 4
Rx error                ....... 0
```

`awplus#show mrp ring`

Displays MRP ring information when integrated with Profinet.

```
awplus#show mrp ring
Media Redundancy Protocol - Ring Information
MRP Ring 1
 Domain ID:                          ffffffff-ffff-ffff-ffff-ffffffffffff
 Domain Name:
 Ring Status:                        Enabled
 Running State:                      Running
 Operating Mode:                     CLI
 Role:                               Client
 Port1:                              port1.0.1
  Status:                            Blocking
 Port2:                              port1.0.2
  Status:                            Blocking
 Vlan ID:
 Profile:                            200ms
  Link Down Interval:                20ms
  Link Up Interval:                  20ms
  Link Change Count:                 4
  Blocked port state supported:      Yes
```

`awplus#show mrp ports`

Displays MRP port information.

```
awplus#show mrp ports
Media Redundancy Protocol - Port Information

Connection         Port         State
-----------------------------------------
Ring 1             port1.0.1    Blocking
Ring 1             port1.0.2    Blocking
```

`awplus#show counter mrp`

Displays MRP counter information.

```
awplus#show counter mrp
Media Redundancy Protocol Global Counters

MRP Started             ....... 1
MRP Dispatcher          ....... 0
MRP Dispatch overflow   ....... 0
MRP Packet RX           ....... 0
MRP Packet RX Error     ....... 0
MRP Packet TX           ....... 0
MRP Packet TX Error     ....... 0

Media Redundancy Protocol Ring 1 Counters

Port 1 PDUs Received
MRP_Test               ......... 0
MRP_TopologyChange     ......... 0
MRP_LinkUp             ......... 0
MRP_LinkDown           ......... 0

Port 1 PDUs Transferred
MRP_Test               ......... 0
MRP_TopologyChange     ......... 0
MRP_LinkUp             ......... 0
MRP_LinkDown           ......... 0

Port 2 PDUs Received
MRP_Test               ......... 0
MRP_TopologyChange     ......... 0
MRP_LinkUp             ......... 0
MRP_LinkDown           ......... 0

Port 2 PDUs Transferred
MRP_Test               ......... 0
MRP_TopologyChange     ......... 0
MRP_LinkUp             ......... 0
MRP_LinkDown           ......... 0

Other Counters
State Changes          ......... 1
Port Blocked Set       ......... 2
Port Forwarding Set    ......... 0
Multiple Manager       ......... 0
```

awplus#show system environment

Displays environment monitoring and check sources of alarms.

```
#show system environment
Environment Monitoring Status

Overall Status: ***Fault***

Resource ID: 1  Name: IE340L-18GP
ID  Sensor (Units)                      Reading  Low Limit High Limit Status
1   Temp: System (Degrees C)                 36   85(Hyst)         90     Ok
2   Voltage: Input 1 (Volts)              0.000     52.500     57.000  FAULT
3   Voltage: Input 2 (Volts)             47.937     52.500     57.000  FAULT
4   Almmon: LED Output                       No          -          -      Ok
5   Contact Input 1                        Open          -          -      Ok
6   Almmon: Relay Output 1               Closed          -          -      Ok
7   Power Input 1                            No          -          -      Ok
8   Power Input 2                            No          -          -      Ok
```

awplus#show lldp local-info

Profinet defines protocol specific TLVs which the controller can also read via Profinet protocol. The device can also be configured via Profinet to raise an alarm if the neighbor information is changed from the expected value.

```
#show lldp local-info pnio interface port1.0.6

LLDP Local Information:

Local port1.0.6:
  Chassis ID Type ................... Locally assigned
  Chassis ID ........................ Allied Telesis            IE340L-18GP
                                      A10306G193900074     1 T  0  0  0
  Port ID Type ...................... Locally assigned
  Port ID ........................... port-006.ie340l-18-gp
  TTL ............................... 20
  PROFINET I/O ...................... Configured
       Delay ........................ [not supported]
       Port Status - Class 2 ........ Off [not supported]
                     Class 3 ........ Off [not supported]
       Alias ........................ port-006.ie340l-18-gp
       MRP - UUID ................... ffffffff-ffff-ffff-ffff-ffffffffffff
             Port Status ............ Off
       MRP Interconnect Status ..... [not supported]
       Chassis MAC ................. 000c.252a.84c9
       Precision Time Clock Status . [not supported]
       MAU Type Extension .......... [not supported]
```

awplus#show lldp neighbors

Displays LLDP neighbor details for an interface.

```
# show lldp neighbors detail pnio interface port1.0.6

LLDP Detailed Neighbor Information:

Local port1.0.6:
  Neighbors table last updated 0 hrs 9 mins 16 secs ago

  Chassis ID Type ................. Locally assigned
  Chassis ID ...................... ie340-20gp
  Port ID Type .................... Locally assigned
  Port ID ......................... port-007
  TTL ............................. 20 (secs)
  PNIO Delays: .................... [not advertised]
  PNIO Port Status: RTClass2: ..... Off
                    RTClass3: ..... Off
                    Fragmentation: . Off
                    Preamble Length: Seven octets
                    Optimization: .. Off
  PNIO Alias: ..................... port-007
  PNIO MRP: UUID: ................. [not advertised]
  PNIO Chassis MAC: ............... 000c.252a.88fa
```

awplus#show interface port

The Profinet protocol provides information such as port type, state and statistics.This can be checked on the device with **show interface** command.

```
awplus#show interface port1.0.6
Interface port1.0.6
  Scope: both
  Link is UP, administrative state is UP
  Thrash-limiting
    Status Not Detected, Action learn-disable, Timeout 1(s)
  Hardware is Ethernet, address is 000c.252a.84c9
  index 5006 metric 1 mru 1500
  current duplex full, current speed 1000, current polarity mdix
  configured duplex auto, configured speed auto, configured polarity auto
  <UP,BROADCAST,RUNNING,MULTICAST>
  SNMP link-status traps: Disabled
  SNMP mac-change traps - added: Disabled, removed: Disabled
    input packets 7166, bytes 1278450, dropped 0, multicast packets 361
    output packets 31322, bytes 2769537, multicast packets 22621, broadcast pack
ets 2232
    input average rate : 30 seconds 19.38 Kbps, 5 minutes 16.75 Kbps
    output average rate: 30 seconds 53.71 Kbps, 5 minutes 43.41 Kbps
    input peak rate 21.70 Kbps at 2021/12/03 06:38:26
    output peak rate 57.13 Kbps at 2021/12/03 06:43:02
  Time since last state change: 0 days 00:10:05
  Unknown unicast flooding blocking is disabled
```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