Anybus® BY HMS NETWORKS

Anybus® X-gateway™

PROFINET® IRT (2.32)

USER MANUAL

SCM-1202-028 1.2 en-US ENGLISH

HMS Connecting Devices™

Important User Information

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1 Preface

1.1 About This Document

This document describes how to configure and use the Anybus X-gateway PROFINET IRT (2.32).

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please visit www.anybus.com/support.

1.2 Document history

Version	Date	Description
1.0	2017-01-23	First release
1.1	2017-11-22	Update for new firmware
1.2	2019-04-11	Added section about PROFINET Asset Management

1.3 Document Conventions

Ordered lists are used for instructions that must be carried out in sequence:

1. First do this
2. Then do this

Unordered (bulleted) lists are used for:

- Itemized information
- Instructions that can be carried out in any order

...and for action-result type instructions:

► This action...

→ leads to this result

Bold typeface indicates interactive parts such as connectors and switches on the hardware, or menus and buttons in a graphical user interface.

```
Monospaced text is used to indicate program code and other
kinds of data input/output such as configuration scripts.
```

This is a cross-reference within this document: *Document Conventions, p. 4*

This is an external link (URL): www.hms-networks.com

This is additional information which may facilitate installation and/or operation.

This instruction must be followed to avoid a risk of reduced functionality and/or damage to the equipment, or to avoid a network security risk.

Caution
This instruction must be followed to avoid a risk of personal injury.

WARNING
This instruction must be followed to avoid a risk of death or serious injury.

1.4 Document-specific Conventions

The following conventions are used specifically in this document:

- Hexadecimal values are written as NNNNh (the suffix h indicates hexadecimal notation).
- 16 and 32 bit values are stored in Motorola (big endian) format unless otherwise stated.

2 Description

2.1 Overview

The Anybus X-gateway PROFINET IRT (2.32) is a multi purpose communication solution offering industrial protocol support as well as web and email capabilities. It acts as a PROFINET device (slave), which means that it can be accessed by a PROFINET controller (master) but will not initiate communication by itself.

The interface exchanges data via two memory buffers that can be accessed via a built in webserver or via industrial network protocols such as PROFINET IO.

Input Buffer	Contains data coming **to** the PROFINET IRT **from** the X-gateway (data from another network).
Output Buffer	Contains data to be sent **from** the PROFINET IRT **through** the X-gateway to another network.

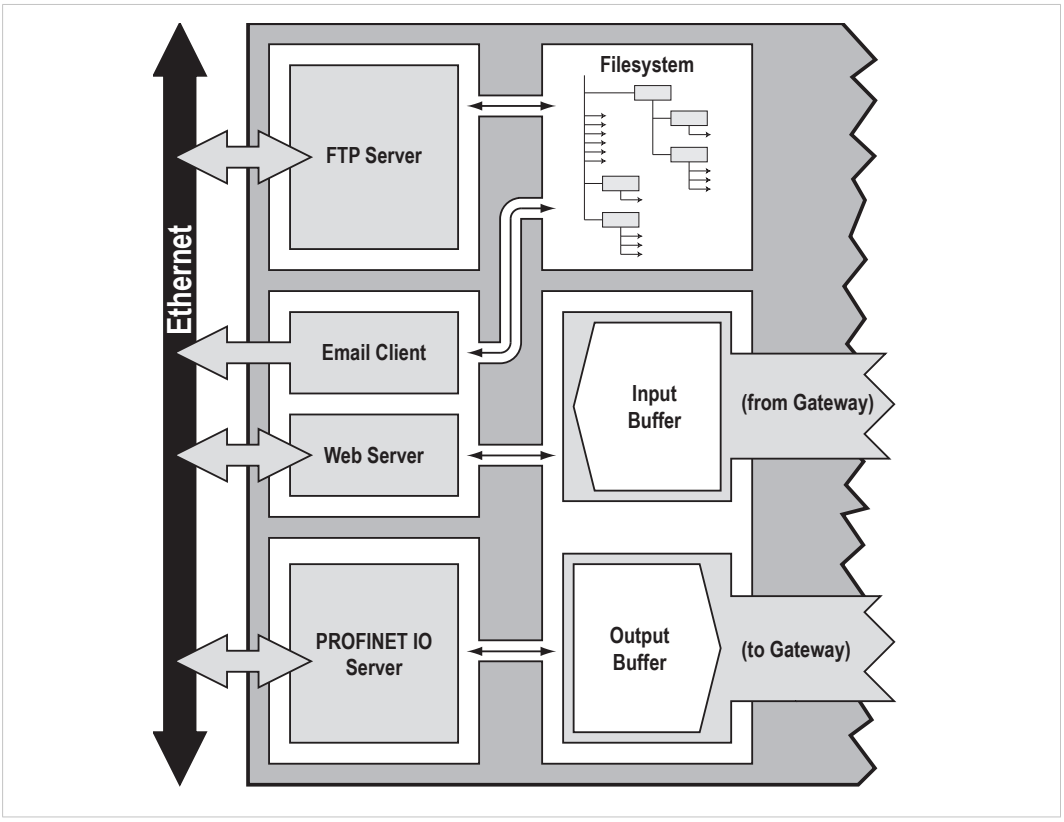


Fig. 1 Overview of data flow

See also *PROFINET Data Exchange, p. 13*.

3 Connectors

> ! This product contains parts that can be damaged by electrostatic discharge (ESD). Use ESD prevention measures to avoid damage.

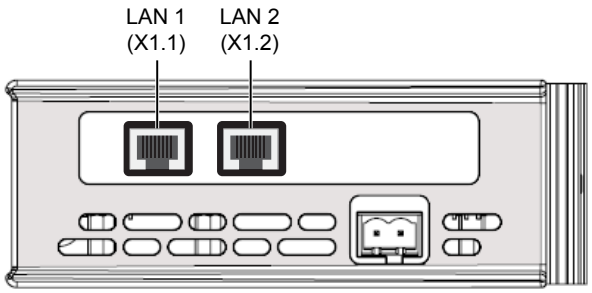


Fig. 2 Top-mounted interface

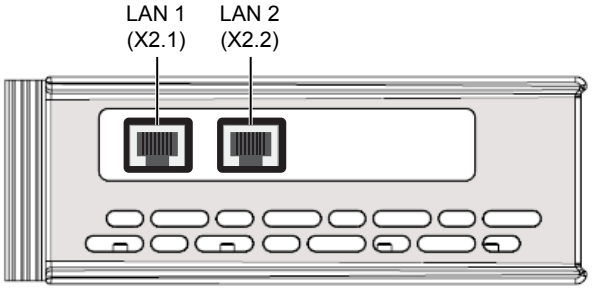


Fig. 3 Bottom-mounted interface

Ethernet Connectors (LAN 1/LAN 2)

The PROFINET IRT interface contains a dual port Ethernet switch. The two LAN ports are labeled **X1.1** and **X1.2** if the interface is top-mounted, and **X2.1** and **X2.2** if the interface is bottom-mounted.

Pin	Function
1	TD+
2	TD-
3	RD+
6	RD-
4, 5, 7, 8	(reserved)

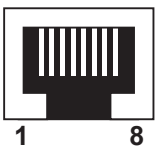


Fig. 4 Ethernet connector (RJ45)

4 LED Indicators

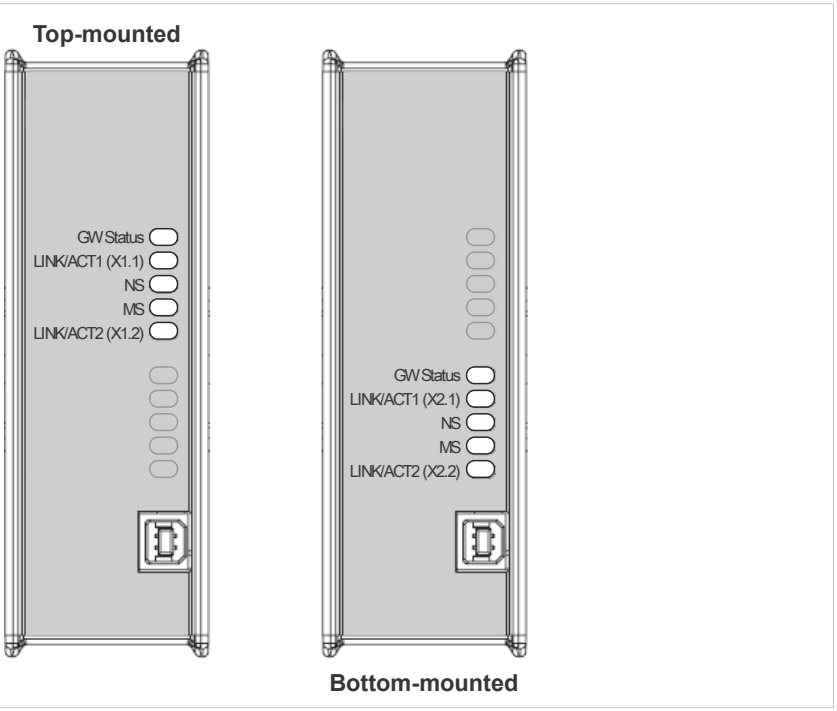


Fig. 5 Front view

LED	Indication	Meaning
GW Status	Gateway status, see Anybus X-gateway User Manual	
LINK/ACT	Green	Link OK
	Green, flickering	Transmitting/receiving data
	Off	Link not detected or no power
NS	Off	Offline - No power- No connection with IO Controller
	Green	Online (RUN) - Connection with IO Controller established
	Green, 1 flash	Online (STOP) - Connection with IO Controller established - IO Controller in STOP state or IO data bad - RT synchronization not finished
	Green, blinking	Node identification (see manual)
	Red	Fatal error
	Red, 1 flash	Station name error
	Red, 2 flashes	IP address error
	Red, 3 flashes	Configuration error
	Alternating Red/Green	Firmware update in progress
MS	Off	No power or initializing
	Green	Normal operation
	Green, 1 flash	Diagnostic event present
	Red	Fatal error
	Alternating Red/Green	Firmware update in progress

5 Network Configuration

To be able to communicate over Ethernet the network interface needs a valid TCP/IP configuration. This section explains some basic concepts in TCP/IP networking and describes how to configure the TCP/IP settings in the Anybus X-gateway PROFINET IRT (2.32) interface using the IPconfig software tool.

When Ethernet communication has been established the TCP/IP settings can also be changed from the web interface. See *Web Pages, p. 12*.

5.1 Basic TCP/IP Concepts

IP Address

The IP address is used to identify each node on a TCP/IP network. IP addresses are written as four decimal integers (0–255) separated by dots, where each integer represents the binary value of one byte of the IP address. This is known as *dot-decimal notation*.

Example: `10000000 00001010 00000010 00011110` is written as `128.10.2.30`

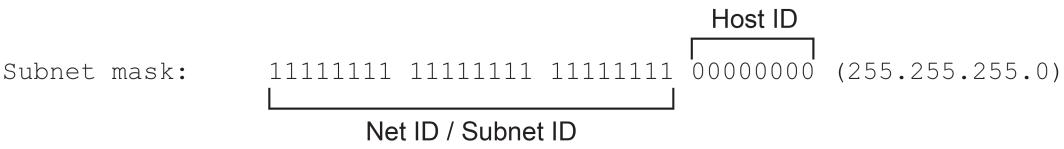
The following IP addresses are reserved for special purposes and cannot be used:

0.n.n.n	First byte zero — used for broadcast messages
127.n.n.n	First byte 127 — used for loopback addresses to the local host
n.n.n.0	Last byte zero — identifies a whole network/subnet
n.n.n.255	Last byte 255 — used for broadcast messages

Subnet Mask

The IP address is divided into three parts: *Net ID*, *Subnet ID* and *Host ID*. A subnet mask is a 32-bit binary pattern, where a set bit allocates a bit for Network/Subnet ID, and a cleared bit allocates a bit for the Host ID. The subnet mask is usually written in dot-decimal notation.

Example: To make the IP address `128.10.2.30` belong to subnet `128.10.2`, the subnet mask must be `255.255.255.0`.



Default Gateway

For devices to be able to communicate over Ethernet they must either belong to the same subnet or communicate via a gateway or router.

A gateway or router routes communication between networks, i.e. it enables the nodes on one network to access the nodes on another. The *default gateway* address in the TCP/IP settings of your product specifies the IP address of the gateway or router on the local network.

5.2 TCP/IP Configuration

5.2.1 Installing the IPconfig Utility

IPconfig is a Windows-based tool for configuration of TCP/IP settings in HMS devices. The tool will detect all compatible and active HMS devices on the local network.

1. Download IPconfig from www.anybus.com/support.
2. Unpack the contents of the zip archive and run the installer program.

5.2.2 Scanning for Connected Devices

When IPconfig is started it will automatically scan all available local networks for HMS devices. Detected devices will be listed in the main window. To refresh the list, click on **Scan**.

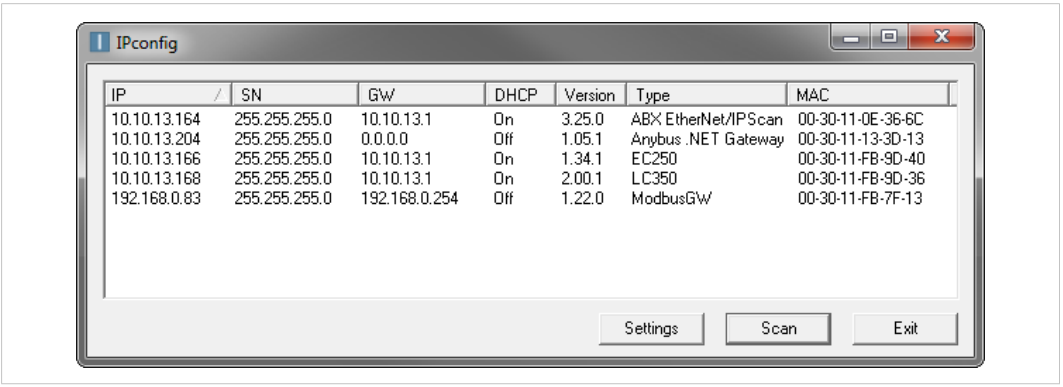


Fig. 6 IPconfig main window

IP	IP address of the device
SN	Subnet mask
GW	Default gateway
DHCP	Automatically managed IP configuration
Version	Firmware version
Type	Product name
MAC	Ethernet MAC address (System ID)

5.2.3 Ethernet Configuration

To change the IP settings for a device, double-click on the entry in the main window or right-click on it and select **Configuration**.

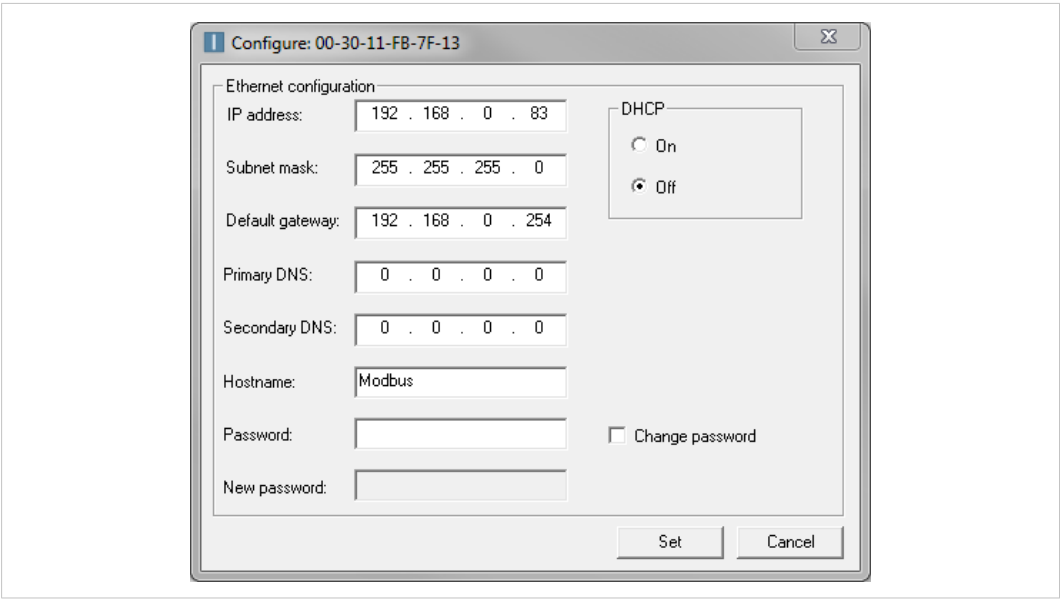


Fig. 7 Ethernet configuration

Enter static IP settings as required, or select DHCP if using dynamic IP addressing.

> **!** Do not enable DHCP if there is no DHCP server available on the network.

You can add a name for the device in the **Hostname** field. Only characters a–z, A–Z, 0–9 and _ (underscore) are allowed.

The default password for changing IP settings is blank (no password). If a password has been set for the device you must enter it to be able to change the settings.

To set a new password, check the **Change password** box and enter the current password in the **Password** field, then enter the new password in the **New password** field.

> **!** For security reasons the default password should always be changed.

Click on **Set** to save the new settings. The device will reboot automatically.

5.2.4 IPconfig Settings

Additional settings for IPconfig can be accessed by clicking on **Settings**.

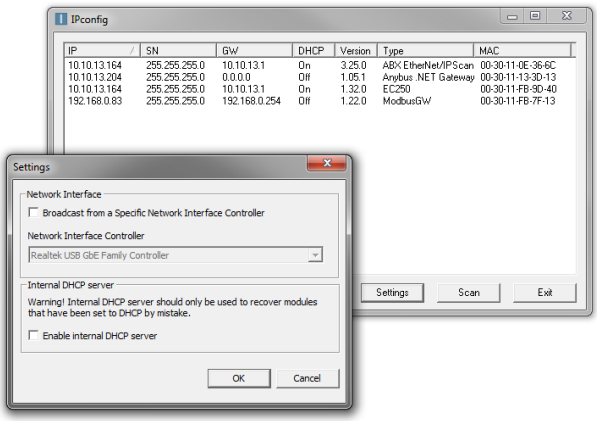


Fig. 8 IPconfig settings

Network Interface

Check this option to select a specific network interface to use when scanning for devices from a computer which has more than one interface. If this option is left unchecked, all available networks will be scanned.

Internal DHCP Server

If a device has been set to use DHCP but there is no DHCP server on the network, the device may not be detected by IPconfig. To recover access to the device an internal DHCP server in IPconfig can be temporarily activated:

1. Click the checkbox for **Internal DHCP Server**, then click **OK**. IPconfig will automatically refresh the scan and list the missing device in the main window.
2. Select the device and configure it to use static IP addressing instead of DHCP.
3. Disable the internal DHCP server.

> **!** Do not enable the internal DHCP server if there is already an active DHCP server on the network.

5.3 DCP (Discovery and Control Protocol)

Anybus X-gateway PROFINET IRT (2.32) supports the DCP protocol, which allows a PROFINET IO Controller/Supervisor to change the network settings during runtime. If successful, this will replace the settings currently stored in the *ethcfg.cfg* file.

6 Web Pages

Network configuration settings and status of the PROFINET IRT network interface can be accessed by pointing a web browser to the IP address of the interface.

Module Overview

Fig. 9 Overview tab

Provides basic information about the PROFINET IRT including the serial number and the installed firmware version.

Network Status

Fig. 10 Status tab

Displays an overview of the current network status.

Network Configuration

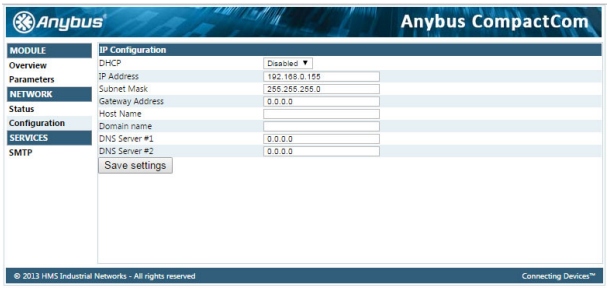


Fig. 11 Configuration tab

Provides access to the TCP/IP network settings. These parameters can also be configured using the *IPconfig* tool.

7 PROFINET Data Exchange

7.1 Overview

PROFINET is the open Industrial Ethernet standard for automation from PROFIBUS and PROFINET International. The PROFINET IRT device provides PROFINET IO Isochronous Real Time Communication.

PROFINET makes a clear distinction between fast cyclical data, *IO Data*, and acyclical data, *Record Data*. PROFINET IO Data corresponds to what is generally referred to as *I/O Data* in the Anybus X-gateway User Manual. PROFINET Record Data corresponds to what is referred to as *Parameter Data*.

PROFINET IO Data (I/O Data)

PROFINET IO Data is exchanged cyclically and is built up by I/O modules. The actual I/O configuration is determined by the PROFINET IO Controller. The modules are mapped to the Input and Output Buffers in the order of their slot number.

PROFINET Record Data (Parameter Data)

Record Data is exchanged using acyclic Record Data Read/Write requests.

See also *Data Representation (IO Data and Record Data), p. 14*.

7.2 GSD File

All PROFINET devices are associated with an XML-based *GSD* file. This file contains information about the basic capabilities and configuration options of the device.

The latest version of the GSD file for the Anybus X-gateway PROFINET IRT (2.32) can be downloaded from www.anybus.com/support.

7.3 Data Representation (IO Data and Record Data)

The actual I/O configuration is determined by the PROFINET IO Controller. The modules are mapped to the Input and Output Buffers in the order of their slot number.

Example:

In this example, the data sizes have been set to the following values:

Input I/O Data Size:	208 bytes
Input Parameter Data Size:	304 bytes
Output I/O Data Size:	176 bytes
Output Parameter Data Size:	336 bytes

The following modules are specified in the IO Controller:

Slot	Module Size	Direction	Comment
0	0	-	Device Access Point (DAP)
1	176 bytes	Output	-
2	208 bytes	Input	-

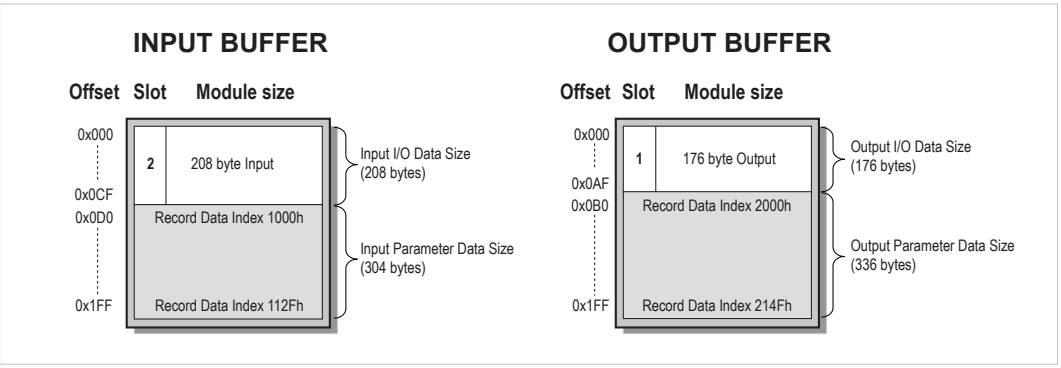


Fig. 12 Input and output buffers

Input Parameter Data				
API	**Slot**	**Subslot**	**Index**	**Comment**
0	0/1/2	1	1000h	First byte of the Input parameter area (address 0x0D0 in the example above)
			1001h	Second byte of the Input parameter area
			...	
			112Fh	Last byte of the Input parameter area

Output Parameter Data				
API	**Slot**	**Subslot**	**Index**	**Comment**
0	0/1/2	1	2000h	First byte of the Output parameter area (address 0x0B0 in the example above)
			2001h	Second byte of the Output parameter area
			...	
			214Fh	Last byte of the Output parameter area

The Control Word and Status Word and the Live List are not considered in this example. For more information, please refer to the Anybus X-gateway User Manual.

7.4 PROFINET Asset Management

7.4.1 Asset Management Record

With the *asset management record* functionality data about the assets available on a non PROFINET network can be recorded and read out over a PROFINET network.

Together with the *Identification & Maintenance data* functionality an extensive registration of devices and machines is possible, even in facilities where the devices are not installed in the PROFINET environment.

Factory owners and system integrators can collect data about devices installed beyond the *Anybus gateway*.

The recorded data can be used as basis for the design of easier maintenance and operation processes, despite the increasing complexity of processes and associated machines.

7.4.2 Recording and Reading Data

An *asset management* file containing all the *assets* and their corresponding data on the non PROFINET network is created and uploaded via an *FTP* server to the Gateway *file system*.

The *asset management* file can be transferred from a computer connected to a PROFINET network.

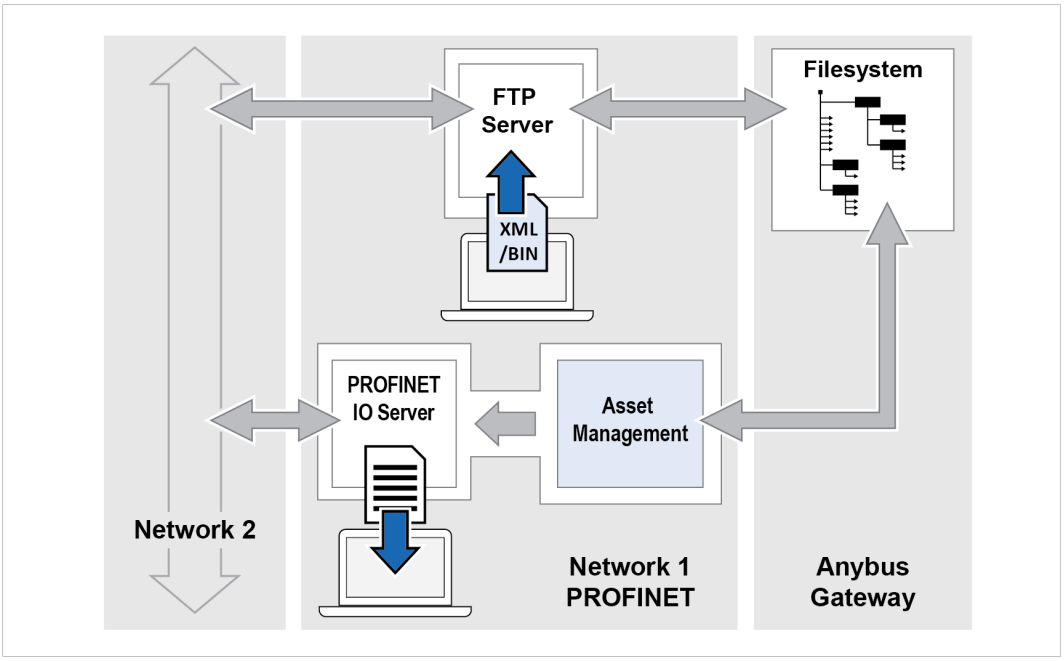


Fig. 13 The Asset Management Default Mode

By using the *superposed parameter channel* mode it is also possible to transfer the *asset management* file from a PLC connected to a non PROFINET network.

For further details about the *superposed parameter channel* mode, please refer to www.anybus.com/support.

Record Data

Data about the *assets* on the non PROFINET network is recorded and stored in an *XML* file or an *binary* file.

Read Data

Each time an *instance* is requested the *asset management* data is read out over the PROFINET network.

The recorded *asset management* data can be downloaded to a computer connected to the PROFINET network.

7.4.3 Supported File Formats

The following file formats are supported for the *asset management* file.

Format	Version
XML	XML Version 1.0
Binary file Little-endian	N/A

7.4.4 Supported Asset Management Records

Supported *asset management records*:

- Unique ID
- Location
- Hardware Revision
- Annotation
- Order ID
- Serial Number
- Software Revision
- Serial Number

7.4.5 XML Based Asset Management

Creating the Asset Management XML File

Creating the *asset management* XML file:

1. List all assets and their corresponding data on the non PROFINET network.
2. Create an XML file that include one *asset management record* for each asset.

   Repeat all the *attributes* after each other.
3. When all *attributes* are listed, close the *element* by using a *closing entry.*
4. Name the XML file *asset_mgmt*.

XML File Size Limitation

The size of the asset management file may not exceed 95 kb.

Up to 32 *instances* can be added.

In order to keep the file size small, consider the following:

- Keep strings as short as possible.
- Do not pad with empty spaces for strings.
- Try to use as few spaces as possible for indentation in the file.
- The number of white-space also affects the file size.
- Avoid using *optional name strings*.

XML Attribute Name and Data Format

The order of the elements is significant for the XML schema to work with the Anybus Gateways.
If the XML schema is incorrect, the XML file will not work and no data will be recorded.

When creating the XML file, add the *elements* and their *attributes* in the same order as the *attribute names* are listed in the table below.

Each *element* consists of a series of *attributes* and their various data.

Each *attribute* is described by one *entry.*

The supported *attribute names* are specified in the table.

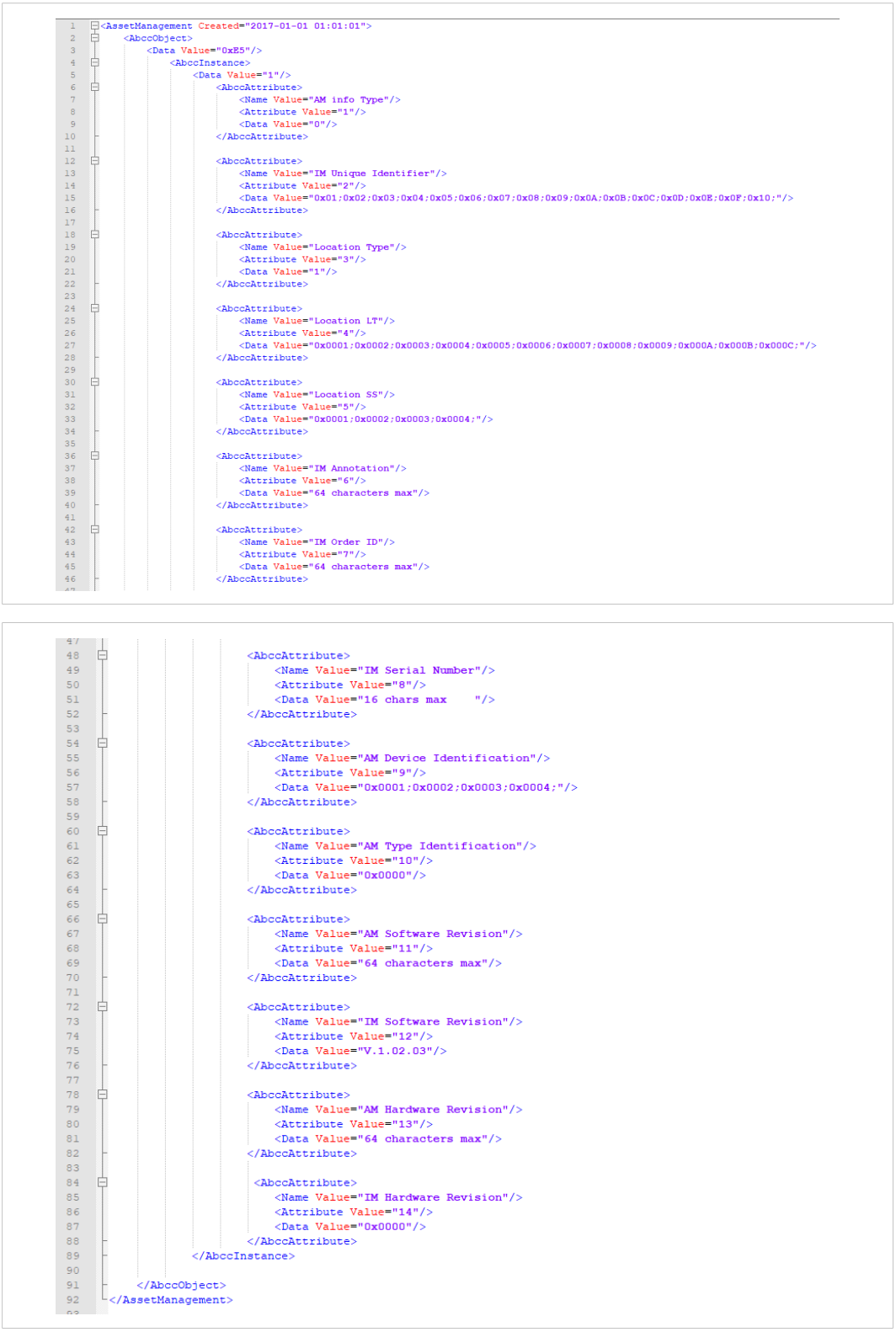
Example 1: XML *element* including an *attribute* with the *location* record.

```
<AbccAttribute>
<Name Value="Location Type"/>
<Attribute Value="3"/>
<Data Value="1"/>
</AbccAttribute>
```

Attribute Name and Data Format		
Attribute Name	**Data Format**	**Description**
AM info Type Location Type	Unsigned 8	The value can be set in either of two formats, `0x12` or `18`.
AM Type Identification IM Hardware Revision	Unsigned 16	The value can be set in either of two formats, `0x1234` or `4660`.
IM Annotation	String of length `X`	Maximum number of elements in array: 64.
IM Order ID	String of length `X`	Maximum number of elements in array: 64.
IM Serial Number	String of length `X`	Maximum number of elements in array: 16.
AM Software Revision	String of length `X`	Maximum number of elements in array: 64.
AM Hardware Revision	String of length `X`	Maximum number of elements in array: 64.
IM Software Revision	String	Format of the string shall be `C.X.Y.Z`. `C` is one character. `X`, `Y` and `Z` represent a value between 0 and 255. `X` – Major version `Y` – Minor version `Z` – Internal
IM Unique Identifier	Array of Unsigned 8 Length is 16	Format of the value shall be `0xXX;0xYY…0xZZ`. 16 values in hex-format, where each value is separated by a ";".
Location LT	Array of Unsigned 16 Length is up to 12 elements.	Format of the value shall be `0xXXXX;0xYYYY…0xZZZZ`. Up to 12 values in hex-format, where each value is separated by a ";".
Location SS AM Device Identification	Array of Unsigned 16 Length is 4.	Format of the value shall be `0xXXXX;0xYYYY…0xZZZZ`. 4 values in hex-format, where each value is separated by a ";".

Asset Management XML File Structure Example

The code example presented below can be used as a guide when creating the *asset management* XML file.



```
<AssetManagement Created="2017-01-01 01:01:01">
    <AbccObject>
        <Data Value="0xE5"/>
            <AbccInstance>
                <Data Value="1"/>
                    <AbccAttribute>
                        <Name Value="AM info Type"/>
                        <Attribute Value="1"/>
                        <Data Value="0"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="IM Unique Identifier"/>
                        <Attribute Value="2"/>
                        <Data Value="0x01;0x02;0x03;0x04;0x05;0x06;0x07;0x08;0x09;0x0A;0x0B;0x0C;0x0D;0x0E;0x0F;0x10;"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="Location Type"/>
                        <Attribute Value="3"/>
                        <Data Value="1"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="Location LT"/>
                        <Attribute Value="4"/>
                        <Data Value="0x0001;0x0002;0x0003;0x0004;0x0005;0x0006;0x0007;0x0008;0x0009;0x000A;0x000B;0x000C;"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="Location SS"/>
                        <Attribute Value="5"/>
                        <Data Value="0x0001;0x0002;0x0003;0x0004;"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="IM Annotation"/>
                        <Attribute Value="6"/>
                        <Data Value="64 characters max"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="IM Order ID"/>
                        <Attribute Value="7"/>
                        <Data Value="64 characters max"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="IM Serial Number"/>
                        <Attribute Value="8"/>
                        <Data Value="16 chars max    "/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="AM Device Identification"/>
                        <Attribute Value="9"/>
                        <Data Value="0x0001;0x0002;0x0003;0x0004;"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="AM Type Identification"/>
                        <Attribute Value="10"/>
                        <Data Value="0x0000"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="AM Software Revision"/>
                        <Attribute Value="11"/>
                        <Data Value="64 characters max"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="IM Software Revision"/>
                        <Attribute Value="12"/>
                        <Data Value="V.1.02.03"/>
                    </AbccAttribute>

                    <AbccAttribute>
                        <Name Value="AM Hardware Revision"/>
                        <Attribute Value="13"/>
                        <Data Value="64 characters max"/>
                    </AbccAttribute>

                     <AbccAttribute>
                        <Name Value="IM Hardware Revision"/>
                        <Attribute Value="14"/>
                        <Data Value="0x0000"/>
                    </AbccAttribute>
                </AbccInstance>

    </AbccObject>
</AssetManagement>
```

Fig. 14 Asset management XML file structure example

7.4.6 Binary Based Asset Management

Creating the Asset Management Binary File

Creating the *asset management* binary file:

1. List all assets and their corresponding data on the non PROFINET network.
2. Create an Binary file that include a *asset management record* for each asset.

   Repeat all the *attributes* after each other.
3. When all *attributes* are listed, close the *element* by using a *closing entry.*
4. Name the bin file *asset_mgmt*.

Binary File Size Limitation

The size of the asset management file may not exceed 12 kb.

32 instances can be added, instance 1 to 32.

In order to keep the file size small, consider the following:

- Keep strings as short as possible.
- Do not pad with empty spaces for strings.

Binary File Header

Omitted attributes are disabled or set to their default value.

The size of the file header is 70 bytes.

The supported *file headers* are specified in the table.

Supported File Headers

File Header	Byte Number	Data Type	Comment
File format version	0-1	UINT16	Version number of the file format. Set to 0.
File checksum	2-5	UINT32	Used for version control of the file. Not used by the gateway. If not used, the field must be set to zero.
Byte offset to Instance 1	6-7	UINT16	Byte offset to the start of the data describing Asset management Instance X. Set to zero if instance is not used.
Byte offset to Instance 2	8-9		
Byte offset to Instance 32	68-69		
Instance data	70-x	N/A	Data for the instance(s), as specified below.

Binary Instance Data

Each *instance* consists of a series of *attributes* and their respective data.

Attribute Description

Each *attribute* is described by one entry.

Attribute Description	Byte number	Data type	Comment
Attribute number	0	UINT8	Attribute number of the data being described.
Data length	1	UINT8	Optional checksum. Shall represent the number of data bytes following. Not used by the gateway.
Attribute data	2–x	Depends on the attribute being described.	Data for the attribute. Format shall be as described for the data-type. Not needed for strings padding or termination.

Attribute Closure Description

Use a *closing entry* to close the instance data.

Attribute Description	Byte number	Data type	Comment
Closure	0–1	UINT16	Data-field which tell that there will not follow any more attributes for this instance. Set to value 0xFFFF.

Attribute Name and Data Format

Supported *attribute names* and *data formats*.

Attribute Name and Data Format

Attribute Name	Data Format	Description
AM info Type Location Type	Unsigned 8	The value is set as one byte value.
AM Type Identification IM Hardware Revision	Unsigned 16	The value is set with two bytes, *little-endian* format.
IM Annotation	String of length X	Maximum number of elements in array: 64.
IM Order ID	String of length X	Maximum number of elements in array: 64.
IM Serial Number	String of length X	Maximum number of elements in array: 16.
AM Software Revision	String of length X	Maximum number of elements in array: 64.
AM Hardware Revision	String of length X	Maximum number of elements in array: 64
IM Software Revision	Array of Unsigned 8 Length is 4	First byte is a character. Bytes 2, 3 and 4 represent the version in the format X.Y.Z where X, Y and Z represent a value between 0 and 255. C is one character. X, Y and Z represent a value between 0 and 255. X – Major version Y – Minor version Z – Internal
IM Unique Identifier	Array of Unsigned 8 Length is 16	Format is 16 bytes.
Location LT	Array of Unsigned 16 Length is up to 12 elements.	Each Unsigned 16 comprises two bytes, where each two bytes form an Unsigned 16 in *little-endian* format. The number of Unsigned 16's can be up to 12, placed directly after each other
Location SS AM Device Identification	Array of Unsigned 16 Length is 4.	Each Unsigned 16 comprises two bytes, where each two bytes form an Unsigned 16 in *little-endian* format. The number of Unsigned 16's shall be 4, placed directly after each other.

Asset Management Binary File Example

The binary file structure example presented below can be used as a guide when creating the *asset management* binary file.

Only *instance 1* is supported.

For *instance 1*, only attribute 1 and 2 are defined.

	0	1	2	3	4	5	6	7
0	0x00	0x00	0x01	0x02	0x03	0x04	0x46	0x00
8	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
16	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
24	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
32	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
40	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
48	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
56	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00
64	0x00	0x00	0x00	0x00	0x00	0x00	0x01	0x01
72	0x01	0x02	0x10	0x01	0x02	0x03	0x04	0x05
80	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D
88	0x0E	0x0F	0x10	0xFF	0xFF			

Fig. 15 Binary file example

7.4.7 Uploading the Asset Management File to the FTP Server

Use *Windows Explorer* or a standard *FTP client* to transfer the *asset management file* to the *FTP server.*

When the *superposed parameter channel* function is enabled, transfer the *asset management file* via a PLC connected to the network where the gateway is installed.

Transferring the Asset Management File from Windows Explorer

Transfer the *asset management file*, XML or binary file, to the *FTP server* using *Windows Explorer.*

Before You Begin

Use only one of the file formats, XML format or binary format.

Only upload one single file on the FTP server.

- Name the *asset management file*: *asset_mgmt*
- The default port is FTP port 21.
- Make sure that the gateway and your computer are connected to the PROFINET network to be used.

Procedure

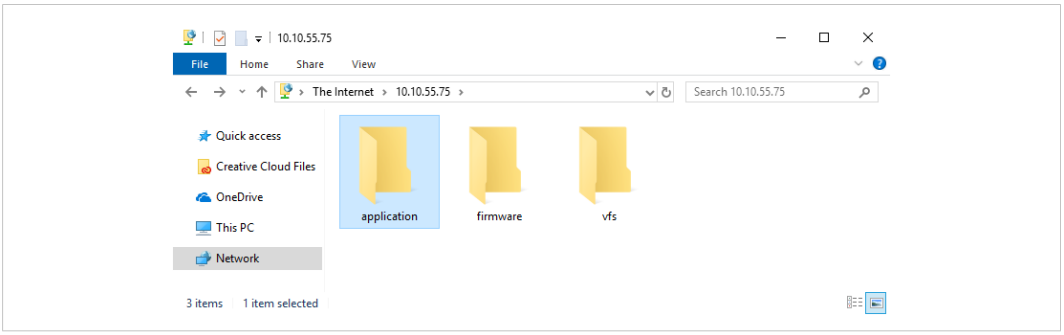


Fig. 16 The FTP Server root folder

1. Open an **Windows Explorer Window**.
2. Click to select the Address bar.
3. Enter **ftp://Username:Password@IPaddress**.
   - Replace “Username” and “Password” with a valid username and password combination.
   - Replace ‘IPaddress’ with the IP address of the PROFINET interface.
4. Press **Enter**.

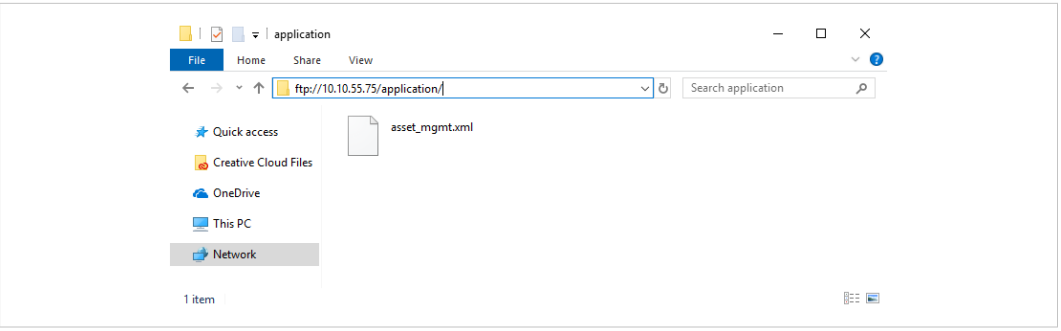


Fig. 17 Application folder with an asset_mgmt.xml file

5. Open the *application* folder and save the *asset management file*, XML or Binary file, in the folder.

8 Ethernet Transport Provider

8.1 General

The Ethernet interface supports the Transport Provider protocol, which allows a host to control the network interface on the other side of the gateway using the standard Anybus-S API.

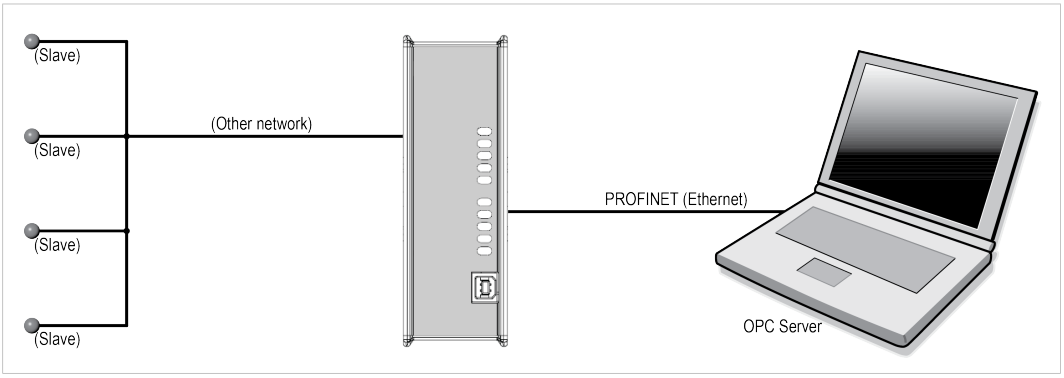


Fig. 18 Ethernet Transport Provider

8.2 Allocation of I/O Data

Example

I/O Size, Interface A = 30 bytes

I/O Size, Interface B = 20 bytes

Transport Provider I/O Size = 20 bytes - 10 bytes = **10 bytes**

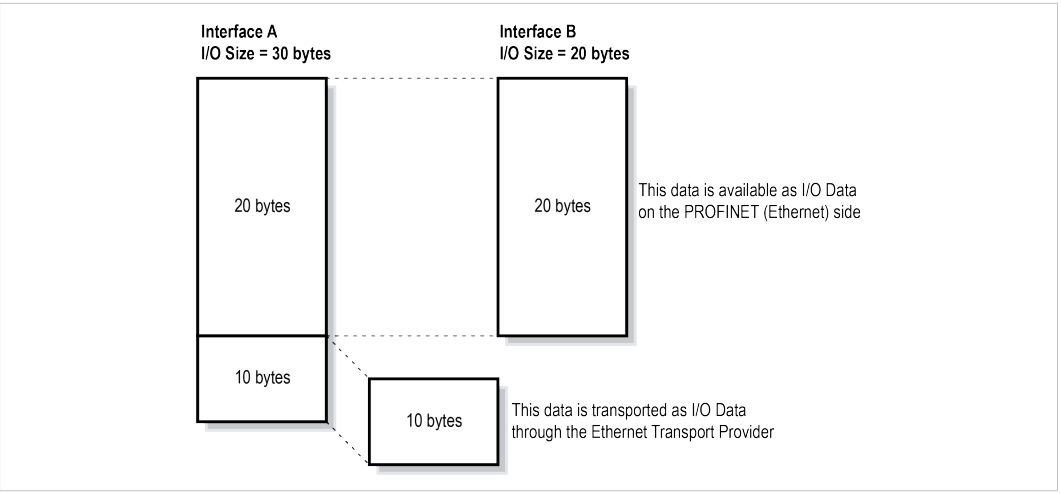


Fig. 19 Transport Provider example

If the Transport Provider shall handle the complete I/O image towards the other network, the I/O size should be set to 0 (zero) on the Ethernet interface.

9 Technical Data

9.1 Technical Specifications

PROFINET specification	2.32
PROFINET functionality	• Isochronous Real-Time (IRT) communication • Conformance supporting Class A, B and C • Media Redundancy Protocol (MRP) support • Discovery and Configuration Protocol (DCP) support • Acyclic Data exchange (Record Data Requests) • Asset Management
Isochronous cycle times	0.250 ms to 16 ms
Maximum I/O data	Up to 512 byte in each direction
Ethernet	• 100 Mbit/s, full duplex (fixed) • Dual port cut-through switch, RJ45 connectors • Ethernet Transport Provider support

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