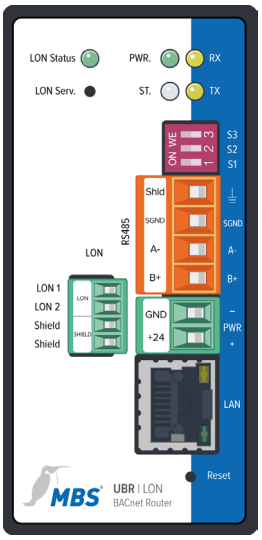
BACnet Protocol Implementation Conformance Statement

MBS Universal BACnet Router

UBR-LON - Version: 2023, September 27



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2 Foreword

Thank you for using the MBS Universal BACnet Router.

This document describes the BACnet functionality implemented in the MBS Universal BACnet Router UBR-LON.

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Telephone: +49 2151 7294 - 0

Fax: +49 2151 7294-50

E-mail: info@mbs-solutions.de

Internet: www.mbs-solutions.de

Software version (firmware): 5.0.8.0

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Product support

Monday-Friday (exception: public holidays):

8:30 - 12:00 and 13:00 - 17:00 CET/CEST

Telephone: +49 2151 7294-0

Fax: +49 2151 7294-50

E-mail: support@mbs-solutions.de

Internet: www.mbs-solutions.de

Note on disposal

In accordance with European Directive 2012/19/EU (WEEE) the devices are classified as used electronic devices and not as domestic waste for disposal purpose. Use the respective community collection points for disposal.

3 BACnet PICS MBS Universal BACnet Router UBR-LON

Date:	2023, September 27
Vendor Name:	MBS GmbH, Krefeld
Vendor Identifier:	50
Product Name:	Universal BACnet Router
Product Model Name:	UBR-LON
Application Software Version:	5.0.8
Firmware Revision:	1.23
BACnet Protocol Version:	1
BACnet Protocol Revision:	23

Product Description

The MBS Universal BACnet Router UBR-LON provides reliable BACnet routing for the BACnet over: BACnet IP, Ethernet, BACnet MSTP and BACnet/SC datalayers. Two network interfaces and two MSTP interfaces are available. The UBR-LON can provide security tunnelling to connect normal BACnet devices over BACnet security networks (BACnet/SC). The UBR has a web interface for easy configuration. Extensive diagnostic information on BACnet traffic helps both for deployment and for normal operation.

BACnet Standardized Device Profiles (Annex L)

The UBR-LON provides the functionality according to the following device profiles:

L.7.1 BACnet Router (B-RTR)

L.7.3 BACnet Broadcast Management Device (B-BBMD)

L.7.6 BACnet Secure Connect Hub (B-SCHUB)

List all BACnet Interoperability Building Blocks Supported (Annex K)

K.1. Data-Sharing BIBBs

Data Sharing - Read Property - A	DS-RP-A
Data Sharing - Read Property - B	DS-RP-B
Data Sharing - Read Property Multiple - B	DS-RPM-B
Data Sharing - Write Property - B	DS-WP-B
Data Sharing - Write Property Multiple - B	DS-WPM-B

K.5. Device and Network Management BIBBs

Device Management - Dynamic Device Binding - A	DM-DDB-A
Device Management - Dynamic Device Binding - B	DM-DDB-B
Device Management - Dynamic Object Binding - B	DM-DOB-B
Device Management - Device Communication Control - B	DM-DCC-B
Device Management - Slave Proxy - B	DM-SP-B
Device Management - Time Syncronisation - B	DM-TS-B
Device Management - UTC Time Syncronisation - B	DM-UTC-B
Device Management - Reinitialize Device - B	DM-RD-B

Network Management - BBMD Configuration - B	NM-BBMDC-B
Network Management - Router Configuration - B	NM-RC-B
Network Management - Foreign Device Registration - A	NM-FDR-A

K.6. Network Security BIBBs

Network Management - Secure Connect Hub-B	NM-SCH-B
Network Management - Secure Connect Direct Connect - A	NM-SCDC-A
Network Management - Secure Connect Direct Connect - B	NM-SCDC-B

Segmentation Capability

☒ Segmented requests supported Window Size: 8

☒ Segmented responses supported Window Size: 8

Data Link Layer Options

☐ BACnet IP, (Annex J)

☒ BACnet IP, (Annex J), Foreign Device

☒ BACnet/SC, (Annex AB)

☒ ISO 8802-3, Ethernet (Clause 7)

☐ ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)

☐ ANSI/ATA 878.1, RS-485 ARCNET (Clause 8) baud rate(s) ___

☒ MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 57600, 76800, 115200

☐ MS/TP slave (Clause 9), baud rate(s): _

☐ Point-To-Point, EIA 232 (Clause 10) baud rate(s)

☒ LonTalk, (Clause 11) medium: FTT10

☐ BACnet/Zigbee (Annex O)

☐ Other: _____

Device Address Binding

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)
☐ Yes ☒ No

Networking Options

☒ Router, Clause 6

☐ Annex H, BACnet Tunneling Router over IP

☒ BACnet/IP Broadcast Management Device (BBMD)

Does the BBMD support registrations by Foreign Devices?
☒ Yes ☐ No (Max. 100 FD-Entries)

Does the BBMD support network address translation? ☐ Yes ☒ No

Network Security Options

☒ BACnet Secure Connect (Annex AB)

☒ BACnet Secure Connect Node

☒ If direct connections are supported:

Maximum number of simultaneous direct connections initiated: _100_

Maximum number of simultaneous direct connections accepted:_100_

☒ BACnet Secure Connect Hub Function
Maximum number of simultaneous hub connections accepted: _100_

☒ Additional cipher suites supported beyond those required for TLS V1.3

☒ The additional cipher suites supported using the cipher suite names as of the TLS Cipher Suite Registry at IANA (See RFC 8446):

"TLS_DHE_RSA_WITH_CHACHA20_POLY1305_SHA256:"
"TLS_DHE_RSA_WITH_AES_256_GCM_SHA384:"
"TLS_DHE_RSA_WITH_AES_128_GCM_SHA256:"
"TLS_DHE_RSA_WITH_AES_128_CBC_SHA:"
"TLS_DHE_RSA_WITH_AES_256_CBC_SHA:"
"TLS_DHE_RSA_WITH_AES_128_CBC_SHA256:"
"TLS_DHE_RSA_WITH_AES_256_CBC_SHA256:"
"TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305_SHA256:"
"TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256:"
"TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384:"
"TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256:"
"TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA:"

☐ Additional Transport Layer Security versions other than V1.3 supported
The TLS versions other than V1.3 that are supported, including the supported cipher suites for the version beyond those required, using the cipher suite names as defined by the TLS version supported:

_____

☐ Generates private keys internally, and provides matching certificate signing requests.

☒ DNS host name resolution supported (RFC 1123)

☐ mDNS host name resolution supported (RFC 6762)

Character Sets Supported

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

☒ ISO 10646 (UTF-8)

☐ IBM/Microsoft DBCS

☐ ISO 8859-1

☐ ISO 10646 (UCS-2)

☐ ISO 10646 (UCS-4)

☐ JIS C 6226

Communication Gateway

The UBR-LON is not a communication gateway.

Standard Object Types Supported

The supported object types are:

Device Object Type	(8)
Network Port Object Type	(56)

Creation and Deletion of objects is not supported.

The MBS UBR-LON does not contain any proprietary properties.

Device Object Type

Property Identifier	Property Datatype	CC	Available	Access
Object_Identifier	BACnetObjectIdentifier	R	Always	Read
Object_Name	CharacterString	R	Always	Read
Object_Type	BACnetObjectType	R	Always	Read
System_Status	CharacterString	R	Always	Read
Vendor_Name	CharacterString	R	Always	Read
Vendor_Identifier	Unsigned16	R	Always	Read
Model_Name	CharacterString	R	Always	Read
Firmware_Revision	CharacterString	R	Always	Read
Application_Software_Version	CharacterString	R	Always	Read
Location	CharacterString	O	Always	Read
Description	CharacterString	O	Always	Read
Protocol_Version	Unsigned	R	Always	Read
Protocol_Revision	Unsigned	R	Always	Read
Protocol_Services_Supported	BACnetServicesSupported	R	Always	Read
Protocol_Object_Types_Support.	BACnetObjectTypesSupported	R	Always	Read
Object_List	BACnetARRAY[N] of BACnetObjectIdent.	R	Always	Read
Structured_Object_List	BACnetARRAY[N] of BACnetObjectIdent.	O	Never	---
Max_APDU_Length_Accepted	Unsigned	R	Always	Read
Segmentation_Supported	BACnetSegmentation	R	Always	Read
Max_Segments_Accepted	Unsigned	O	Always	Read
VT_Classes_Supported	List of BACnetVTClass	O	Never	---
Active_VT_Sessions	List of BACnetVTSession	O	Never	---
Local_Time	Time	O	Always	Read
Local_Date	Date	O	Always	Read
UTC_Offset	INTEGER	O	Always	Read
Daylight_Saving_Status	BOOLEAN	O	Always	Read
APDU_Segment_Timeout	Unsigned	O	Config	Read
APDU_Timeout	Unsigned	R	Always	Read
Number_Of_APDU_Retries	Unsigned	R	Always	Read
Time_Synchronization_Recipients	List of BACnetRecipient	O	Never	---

Property Identifier	Property Datatype	CC	Available	Access
Max_Master	Unsigned(1..127)	O	Config	R/W
Max_Info_Frames	Unsigned	O	Config	R/W
Device_Address_Binding	List of BACnetAdressBinding	R	Always	Read
Database_Revision	Unsigned	R	Always	Read
Last_Restore_Time	BACnetTimeStamp	O	Never	---
Configuration_Files	BACnetARRAY[N] of BACnetObjectIdent.	O	Never	---
Backup_Failure_Timeout	Unsigned16	O	Never	---
Backup_Preparation_Time	Unsigned16	O	Never	---
Restore_Preparation_Time	Unsigned16	O	Never	---
Restore_Completion_Time	Unsigned16	O	Never	---
Backup_And_Restore_State	BACnetBackupState	O	Never	---
Active_COV_Subscriptions	List of BACnetCOVSubscriptions	O	Never	---
Slave_Proxy_Enable	BACnetARRAY[N] of BOOLEAN	O	Config	R/W
Manual_Slave_Address_Binding	List of BACnetAddressBinding	O	Config	R/W
Auto_Slave_Discovery	BACnetARRAY[N] of BOOLEAN	O	Config	R/W
Slave_Address_Binding	List of BACnetAddressBinding	O	Config	Read
Last_Restart_Reason	BACnetRestartReason	O	Never	---
Time_Of_Device_Restart	BACnetTimeStamp	O	Never	---
Restart_Notification_Recipients	List of BACnetRecipient	O	Never	---
UTC_Time_Synchron._Recipients	List of BACnetRecipient	O	Never	---
Time_Synchronization_Interval	Unsigned	O	Never	---
Align_Intervals	BOOLEAN	O	Never	---
Interval_Offset	Unsigned	O	Never	---
Serial_Number	CharacterString	O	Always	Read
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R	Always	Read
Profile_Name	CharacterString	O	Never	---

Network Port Object

Property Identifier	Property Datatype	CC	Available	Access
Object_Identifier	BACnetObjectIdentifier	R	Always	Read
Object_Name	CharacterString	R	Always	Read
Object_Type	BACnetObjectType	R	Always	Read
Description	CharacterString	O	Always	Read
Status_Flags	BACnetStatusFlags	R	Always	Read
Reliability	BACnetReliability	R	Always	Read
Out_Of_Service	BOOLEAN	R	Always	R/W
Network_Type	BACnetNetworkType	R	Always	Read
Protocol_Level	BACnetProtocolLevel	R	Always	Read
Reference_Port	Unsigned	O	Never	---
Network_Number	Unsigned16	O	Always	Read
Network_Number_Quality	BACnetNetworkNumberQuality	O	Always	Read
Changes_Pending	BOOLEAN	R	Always	Read
Command	BACnetNetworkPortCommand	O	Never	---
MAC_Address	OCTET STRING	O	Config	Read
APDU_Length	Unsigned	O	Config	Read
Link_Speed	REAL	R	Always	Read
Link_Speeds	BACnetARRAY[N] of REAL	O	Config	Read
Link_Speed_Autonegotiate	BOOLEAN	O	Never	---
Network_Interface_Name	CharacterString	O	Never	---
BACnet_IP_Mode	BACnetIPMode	O	Config	Read
IP_Address	OCTET STRING	O	Config	Read
BACnet_IP_UDP_Port	Unsigned16	O	Config	Read
IP_Subnet_Mask	OCTET STRING	O	Config	Read
IP_Default_Gateway	OCTET STRING	O	Config	Read
BACnet_IP_Multicast_Address	OCTET STRING	O	Never	---
IP_DNS_Server	BACnetARRAY[N]	O	Config	Read
IP_DHCP_Enable	BOOLEAN	O	Never	---
IP_DHCP_Lease_Time	Unsigned	O	Never	---
IP_DHCP_Lease_Time_Remaining	Unsigned	O	Never	---
IP_DHCP_Server	OCTET STRING	O	Never	---

Property Identifier	Property Datatype	CC	Available	Access
BACnet_IP_NAT_Traversal	BOOLEAN	O	Never	---
BACnet_IP_Global_Address	BACnetHostNPort	O	Never	---
BBMD_Broadcast_Distribution_Table	BACnetBDTEntry	O	Config	R/W
BBMD_Accept_FD_Registrations	BOOLEAN	O	Config	R/W
BBMD_Foreign_Device_Table	BACnetFDTEntry	O	Config	R/W
FD_BBMD_Address	BACnetHostNPort	O	Config	R/W
FD_Subscription_Lifetime	Unsigned16	O	Config	R/W
BACnet_IPv6_Mode	BACnetIPMode	O	Never	---
IPv6_Address	OCTET STRING	O15	Never	---
IPv6_Prefix_Length	Unsigned8	O15	Never	---
BACnet_IPv6_UDP_Port	Unsigned16	O14	Never	---
IPv6_Default_Gateway	OCTET STRING	O15	Never	---
BACnet_IPv6_Multicast_Address	OCTET STRING	O14	Never	---
IPv6_DNS_Server	OCTET STRING	O15	Never	---
IPv6_Auto_Addressing_Enable	BOOLEAN	O16	Never	---
IPv6_DHCP_Lease_Time	Unsigned	O	Never	---
IPv6_DHCP_Lease_Time_Remaining	Unsigned	O	Never	---
IPv6_DHCP_Server	OCTET STRING	O	Never	---
IPv6_Zone_Index	CharacterString	O17	Never	---
Max_Master	Unsigned8 (0..127)	O	Config	R/W
Max_Info_Frames	Unsigned8	O	Config	R/W
Slave_Proxy_Enable	BOOLEAN	O	Config	R/W
Manual_Slave_Address_Binding	BACnetAddressBinding	O	Config	R/W
Auto_Slave_Discovery	BOOLEAN	O	Config	R/W
Slave_Address_Binding	BACnetAddressBinding	O	Config	R/W
Virtual_MAC_Address_Table	BACnetVMACEntry	O	Config	Read
Routing_Table	BACnetRouterEntry	O	Always	Read
Event_Detection_Enable	BOOLEAN	O	Never	---
Notification_Class	Unsigned	O	Never	---
Event_Enable	BACnetEventTransitionBits	O	Never	---
Acked_Transitions	BACnetEventTransitionBits	O	Never	---
Notify_Type	BACnetNotifyType	O	Never	---

Property Identifier	Property Datatype	CC	Available	Access
Event_Time_Stamps	BACnetTimeStamp	O	Never	---
Event_Message_Texts	CharacterString	O	Never	---
Event_Message_Texts_Config	CharacterString	O	Never	---
Event_State	BACnetEventState	O	Never	---
Reliability_Evaluation_Inhibit	BOOLEAN	O	Never	---
Property_List	BACnetPropertyIdentifier	R	Always	Read
Audit_Level	BACnetAuditLevel	O	Never	---
Auditable_Operations	BACnetAuditOperationFlags	O	Never	---
Tags	BACnetNameValue	O	Never	---
Profile_Location	CharacterString	O	Never	---
Profile_Name	CharacterString	O	Never	---

4 Annex

Company details

MBS GmbH

Römerstraße 15

47809 Krefeld, Germany

Managing Directors:
Gerhard Memmen-Krüger, Nils-Gunnar Fritz

Registration court: Krefeld HRB 3337
VAT ID no.: DE 120 148 529

Company head office: Krefeld

Responsible for content according to § 6 MDStV:
Gerhard Memmen-Krüger, Nils-Gunnar Fritz