

BACnet Protocol Implementation Conformance Statement XT-LB



Date: 08/01/2018
 Vendor Name: **Carrier**
 Product Name: **iVu XT BACnet Link**
 Product Model Number: **XT-LB**
 Applications Software Version: **N/A**
 Firmware Revision: **101.02.2054**
 BACnet Protocol Revision: **12**



Product Description:

The **XT-LB** is a high-performance BACnet router/gateway providing stand-alone routing between BACnet networks. The XT-LB supports the following network types: BACnet/IP, BACnet/Ethernet, BACnet/ARCnet and BACnet/MS/TP. It has the following physical communication ports: a Gigabit BACnet/IP Ethernet port, a high speed EIA-485 port for ARCNET or MS/TP, an optically Isolated EIA-485 port for MS/TP, a 10/100 Mbps Ethernet port for configuration via a web page, and a USB port for recovery and future use. The XT-LB is fully programmable, so it can also execute complex control strategies for high-level system integration.

BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks Supported (Annex K):

DS-RP-B	AE-N-I-B	SCHED-I-B	T-VMT-I-B	DM-DDB-A
DS-RPM-B	AE-ACK-B	SCHED-E-B	T-ATR-B	DM-DDB-B
DS-WP-B	AE-ASUM-B			DM-DOB-A
DS-WPM-B	AE-INFO-B			DM-DOB-B
DS-COV-A	AE-ESUM-B			DM-DCC-B
DS-COV-B				DM-PT-A
DS-COVU-A				DM-PT-B
DS-COVU-B				DM-TS-A
DS-RP-A				DM-TS-B
DS-RPM-A				DM-UTC-A
DS-WP-A			NM-RC-B	DM-UTC-B
DS-WPM-A				DM-RD-B
				DM-LM-B
				DM-BR-B
				DM-R-B

Segmentation Capability:

- Able to transmit segmented messages Window Size _____ 100 - 1 _____
- Able to receive segmented messages Window Size _____ 100 - 1 _____

Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ANSI/ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) **156k baud**
- MS/TP master (Clause 9), baud rate(s): **9600, 19200, 38400, 57600, 78600, 115200**
- MS/TP slave (Clause 9), baud rate(s): _____
- Point-To-Point, EIA 232 (Clause 10), baud rate(s): _____
- Point-To-Point, modem, (Clause 10), baud rate(s): _____
- LonTalk, (Clause 11), medium: _____
- 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 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
Ethernet-BACnet/IP, Ethernet-ARCNET, Ethernet-MS/TP, BACnet/IP-ARCNET, BACnet/IP-MS/TP, ARCNET-MS/TP, MS/TP-MS/TP
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
 - Does the BBMD support registrations by Foreign Devices? Yes No
 - Does the BBMD support network address translation? Yes No

Character Sets Supported:

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

- ANSI X3.4 IBM™/Microsoft™ DBCS ISO 8859-1
- ISO 10646 (UCS-2) ISO 10646 (UCS-4) JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports: _____

Network Security Options:

- Non-secure Device – is capable of operating without BACnet Network Security
- Secure Device – is capable of using BACnet Network Security (NS-SD BIBB)
 - Multiple Application-Specific Keys
 - Supports encryption (NS-ED BIBB)
 - Key Server (NS-KS BIBB)

Standard Object Types Supported :

An object type is supported if it may be present in the device. For each standard Object Type supported provide the following data:

- 1) Whether objects of this type are dynamically creatable using the CreateObject service
- 2) Whether objects of this type are dynamically deletable using the DeleteObject service
- 3) List of the optional properties supported
- 4) List of all properties that are writable where not otherwise required by this standard
- 5) List of all properties that are conditionally writable where not otherwise required by this standard.
- 6) List of proprietary properties and for each its property identifier, datatype, and meaning
- 7) List of any property range restrictions

Analog Value (PAR):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - acked-transitions
 - cov-increment
 - Deadband
 - description
 - event-enable
 - event-time-stamps
 - high-limit
 - limit-enable
 - low-limit
 - notification-class
 - notify-type
 - priority-array
 - Reliability
 - relinquish-default
 - time-delay
4. Writeable properties:
 - cov-increment
 - Deadband
 - description
 - event-enable
 - high-limit
 - limit-enable
 - low-limit
 - notification-class
 - notify-type
 - out-of-service
 - present-value
 - relinquish-default
 - time-delay
 - units
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
relinquish-default	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

inactive-text	limited to 50 octets in length
minimum-off-time	0 to 4294967295
minimum-on-time	0 to 4294967295
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (MODULE ALARM):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - acked-transitions
 - alarm-value
 - description
 - event-enable
 - event-time-stamps
 - notification-class
 - notify-type
 - time-delay
4. Writeable properties:
 - alarm-value
 - event-enable
 - notification-class
 - notify-type
 - out-of-service
 - time-delay
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

notification-class	must be valid notification-class
time-delay	0 to 4294967295

Device:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - active-cov-subscriptions
 - align-intervals
 - apdu-segment-timeout
 - backup-and-restore-state
 - backup-failure-timeout
 - backup-preparation-time
 - configuration-files
 - daylight-savings-status
 - description
 - interval-offset
 - last-restart-reason
 - last-restore-time
 - local-date
 - local-time
 - location
 - max-segments-accepted
 - max-master
 - max-info-frames
 - restart-notification-recipients
 - time-of-device-restart
 - time-synchronization-interval
 - time-synchronization-recipients
 - restart-notification-recipients
 - utc-offset
 - utc-time-synchronization-recipients
4. Writeable properties:
 - align-intervals
 - apdu-segment-timeout
 - apdu-timeout
 - backup-failure-timeout
 - backup-preparation-time
 - description
 - device-address-binding
 - interval-offset
 - last-restart-reason
 - location
 - number-of-apdu-retries
 - max-master
 - max-info-frames
 - number-of-apdu-retries
 - object-identifier
 - object-name
 - restart-notification-recipients
 - time-synchronization-interval
 - time-synchronization-recipients
 - utc-offset
 - utc-time-synchronization-recipients
5. Conditionally writeable properties where not otherwise required by the standard: None

6. Proprietary properties:

Property no.	Property name	Data Type
661	product-type	unsigned
662	ram-size	unsigned
663	upgrade-status	char string
664	alc-release	char string
665	data-partition-version	char string
4145	active-locale-index	unsigned
4149	auto-identity-scheme	enumerated
4150	auto-identity-base	unsigned
4151	supported-locale-codes	array of unsigned
4152	active-local-code	unsigned
4153	serial-number	char string
4161	array-of-mstp-baud-rates	array of unsigned
4162	test-mode	enumerated
4166	download-id	char string
4167	file-store-size	unsigned
4901	archive-valid-status	enumerated
4902	archive-now-trigger	bool
4920	lonworks-enable-metric-conversion	bool

7. Range restrictions:

description	limited to 50 octets in length
location	limited to 50 octets in length
max-master	1 to 127
object-identifier	must be a valid device identifier
object-name	limited to 50 octets in length
utc-offset	-780 to 780
last-restart-reason	limited to BACnetRestartReason
restart-notification-recipients	0 to 10 BACnetRecipients
auto-identity-scheme	0 or 1
auto-identity-base	0 to 4294967295
active-locale-index	0 to 255
archive-now-trigger	0 or 1
lonworks-enable-metric-conversion	0 or 1

File:

1. Creatable? YES
2. Deletable? NO
3. Optional properties supported:
 - description
4. Writeable properties:
 - archive
 - description
 - file-type
 - file-size
 - modification-date
 - read-only
5. Conditionally writeable properties where not otherwise required by the standard:
 - file-size only writeable as part of file creation
 - modification-date only writeable as part of file creation
6. Proprietary properties: None
7. Range restrictions:
 - description limited to 50 octets in length
 - file-type limited to 50 octets in length

Loop Object (BACnet PID):

1. Creatable? No
2. Deletable? No
3. Optional properties supported:
 - bias
 - cov-increment
 - derivative-constant
 - derivative-constant-units
 - description
 - integral-constant
 - integral-constant-units
 - proportional-constant
 - proportional-constant-units
 - update-interval
4. Writable properties:
 - action
 - bias
 - cov-increment
 - derivative-constant
 - description
 - integral-constant
 - proportional-constant
 - update-interval
5. Conditionally writable properties where not otherwise required by the standard: None
6. Proprietary properties:

Property no.	Property name	Data Type
4163	continuous-proportional	Boolean
4164	deadband	Real
4165	ramp-time	Real

7. Range Restriction:

Property name	Property Restrictions
continuous-proportional	Can only be 0 or 1
deadband	Must be >=0
ramp-time	Must be >=0

Program:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - description
 - description-of-halt
 - instance-of
 - program-location
 - reason-for-halt
 - reliability
4. Writeable properties:
 - description
 - program-change
 - program-location
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
program-location	limited to 50 octets in length

Schedule (ENUM):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - description
 - exception-schedule
 - weekly-schedule
4. Writeable properties:
 - description
 - effective-period
 - exception-schedule
 - list-of-prop-reference
 - out-of-service
 - priority-for-writing
 - schedule-default
 - weekly-schedule
5. Conditionally writeable properties where not otherwise required by the standard:

present-value	writable if out-of-service is TRUE
reliability	writable if out-of-service is TRUE
6. Proprietary properties:

Property no.	Property name	Data Type
557	schedule-names	char string
7. Range restrictions:

description	limited to 50 octets in length
exception-schedule	limited to 30 BACnetSpecialEvents, each being limited to 6 BACnetTimeValues
present-value	0 to 4294967295
relinquish-default	0 to 4294967295
weekly-schedule	limited to 6 BACnetTimeValues per BACnetDailySchedule
schedule-default	0 to 4294967295
reliability	limited to 4 BACnetReliability
out-of-service	limited to Boolean
schedule-names	Limited to 50 octets in length

Schedule (UNS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - description
 - exception-schedule
 - weekly-schedule
4. Writeable properties:
 - description
 - effective-period
 - exception-schedule
 - list-of-prop-reference
 - out-of-service
 - priority-for-writing
 - schedule-default
 - weekly-schedule
5. Conditionally writeable properties where not otherwise required by the standard:

present-value	writable if out-of-service is TRUE
reliability	writable if out-of-service is TRUE
6. Proprietary properties:

Property no.	Property name	Data Type
557	schedule-names	char string
7. Range restrictions:

description	limited to 50 octets in length
exception-schedule	limited to 30 BACnetSpecialEvents, each being limited to 6 BACnetTimeValues
present-value	0 to 4294967295
relinquish-default	0 to 4294967295
weekly-schedule	limited to 6 BACnetTimeValues per BACnetDailySchedule
schedule-default	0 to 4294967295
reliability	limited to 4 BACnetReliability
out-of-service	limited to Boolean

Trend-log (COV or polled):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - acked-transitions
 - client-cov-increment
 - cov-resubscription-interval
 - description
 - event-enable
 - event-time-stamps
 - log-device-object-property
 - log-interval
 - notification-class
 - notification-threshold
 - notify-type
 - records-since-notification
 - start-time
 - stop-time
 - last-notify-record
 - align-intervals
 - interval-offset
4. Writeable properties:
 - buffer-size
 - client-cov-increment
 - cov-resubscription-interval
 - description
 - event-enable
 - log-enable
 - log-interval
 - notification-class
 - notification-threshold
 - notify-type
 - record-count
 - start-time
 - stop-time
 - stop-when-full
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
log-interval	0 to 4294967295
notification-class	must be valid notification-class
notification-threshold	0 to 4294967295
record-count	can only be written to 0
logging-type	limited to 3 BACnetLoggingType
align-intervals	limited to Boolean
interval-offset	0 to 4294967295 in hundredths of seconds
stop-when-full	limited to Boolean

Trend-log (of a non-BACnet property, COV or polled):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - acked-transitions
 - client-cov-increment
 - cov-resubscription-interval
 - description
 - event-enable
 - event-time-stamps
 - last-notify-record
 - log-interval
 - notification-class
 - notification-threshold
 - notify-type
 - records-since-notification
 - start-time
 - stop-time
 - align-intervals
 - interval-offset
4. Writeable properties:
 - buffer-size
 - client-cov-increment
 - cov-resubscription-interval
 - description
 - event-enable
 - log-enable
 - log-interval
 - notification-class
 - notification-threshold
 - notify-type
 - record-count
 - start-time
 - stop-time
 - stop-when-full
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
log_interval	0 to 4294967295
notification_class	must be valid notification_class
notification_threshold	0 to 4294967295
record_count	can only be written to 0
logging-type	limited to 3 BACnetLoggingType
align-intervals	limited to Boolean
interval-offset	0 to 4294967295 in hundredths of seconds
stop-when-full	limited to Boolean

Trend-log (of a non-BACnet property, triggered):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
 - acked-transitions
 - description
 - event-enable
 - event-time-stamps
 - last-notify-record
 - log-interval
 - notification-class
 - notification-threshold
 - notify-type
 - records-since-notification
 - start-time
 - stop-time
 - reliability
 - trigger
4. Writeable properties:
 - buffer-size
 - description
 - event-enable
 - log-enable
 - notification-class
 - notification-threshold
 - notify-type
 - record-count
 - start-time
 - stop-time
 - stop-when-full
 - trigger
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
log_interval	0 to 4294967295
notification_class	must be valid notification_class
notification_threshold	0 to 4294967295
record_count	can only be written to 0
logging-type	limited to 3 BACnetLoggingType
align-intervals	limited to Boolean
interval-offset	0 to 4294967295 in hundredths of seconds
trigger	limited to Boolean
stop-when-full	limited to Boolean
reliability	limited to 4 BACnetReliability