FieldServer
Technologies

BACnet Protocols

BACnet is "a data communication protocol for **B**uilding **A**utomation and **C**ontrol **net**works." This data communication protocol is a set of rules developed by the BACnet committee at ASHRAE governing the exchange of data over a computer network. The rules take the form of a written specification that spells out what is required to conform to the protocol.

There are 5 different options for BACnet, each of which fills a particular niche in terms of the price/performance tradeoff. The first is Ethernet, the fastest at 10 Mbps with 100 Mbps also available. ("Mbps" stands for "millions of bits per second.") Ethernet is also likely to be the most expensive in terms of cost per device.

There are two forms of BACnet for Ethernet. One is called BACnet Ethernet for dedicated BACnet lines and the other is BACnet for TCP called BACnet/IP which can run on a non-dedicated Ethernet line. Next comes BACnet ARCNET at 2.5 Mbps. Both Ethernet and ARCNET can use a variety of physical media including coaxial cable, twisted pairs, even fiber optic cable.

For devices with lower requirements in terms of speed, BACnet defines the BACnet MS/TP (master-slave/token-passing) network designed to run at speeds of 1 Mbps or less over twisted pair wiring (RS-485). All of these networks are examples of "local area networks" or LANs. BACnet also defines a dial-up or "point-to-point" protocol called BACnet PTP for use over phone lines or hardwired RS-232 connections. A key point is that BACnet messages can, in principle, be transported by any network technology, if and when it becomes cost-effective to do so and FieldServer Technologies has the drivers available for all forms of BACnet.
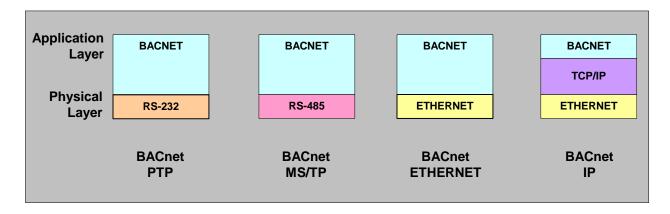
Available BACnet Drivers from FieldServer Technologies

- BACnet/IP FS-8704-06
- BACnet Ethernet FS-8704-02
- BACnet ARCnet FS-8700-07
- BACnet MS/TP FS-8700-73
- BACnet PTP FS-8700-16

BACnet Protocols Supported by FieldServers

FieldServer Technologies Terminology	Notes	Applicable FieldServer Platforms
BACnet Ethernet	BACnet on Ethernet, does not use TCP/IP	-x20, -x25, -x30, -x40, SlotServer
BACnet / IP	BACnet over Ethernet IP. (Also known as BACnet/TCP, BACnet TCP/IP)	-x20, -x25, -x30, -x40, SlotServer
BACnet Arcnet	Not available on FS-x20, only FS-x40.	*-x40 only*
BACnet PTP	Also known as BACnet Serial. (PTP stands for Point-to-Point) RS-232	-x20, -x25, -x30, -x40, SlotServer
BACnet MS / TP	Master-Slave / Token-Passing. Multi-drop. RS-485	-x20, -x25, -x30, -x40, SlotServer

Diagrams of the "Protocol Stack" for each Protocol Instance

Application Layer	BACNET	BACNET	BACNET	BACNET
				TCP/IP
Physical Layer	RS-232	RS-485	ETHERNET	ETHERNET
	BACnet PTP	**BACnet MS/TP**	**BACnet ETHERNET**	**BACnet IP**

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