

FBxNet™

FBxNet™ is a secure, Ethernet based, inter-device communication network which can be used in a peer to peer (P2P) setting to exchange data among Emerson FB3000 RTUs and FB1000 and FB2000 flow computers. Easy to configure, FBxNet simplifies I/O distribution and seamlessly enables robust remote control. Additionally, FBxNet incorporates fault-based handling to ensure appropriate actions are executed if necessary.

FBxNet employs a publisher-subscriber (“pub/sub”) data sharing structure to facilitate information scalability. A subscriber device in the network must be an Emerson FB3000 RTU with a firmware revision that supports FBxNet. Publisher devices in the network can be any mixture of Emerson FB3000 RTUs, Emerson FB1200 flow computers, or Emerson FB2200 flow computers, provided they have firmware revisions which support FBxNet.

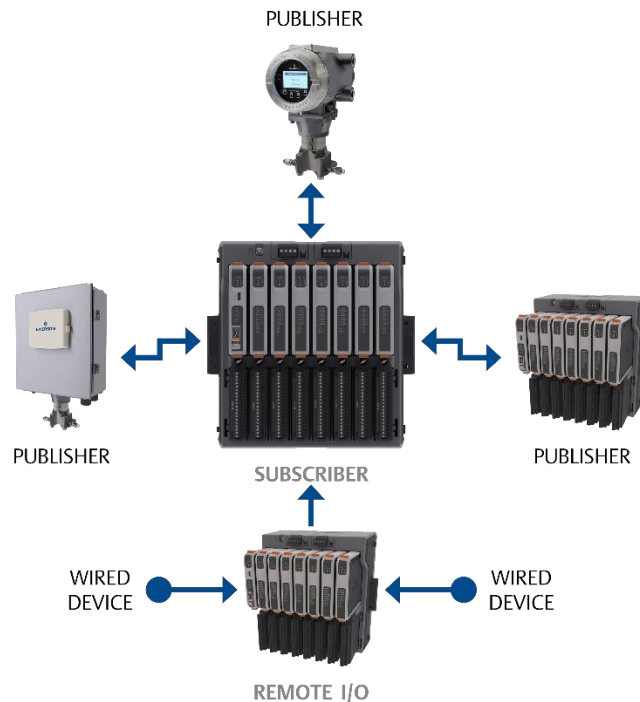
Benefits

- Simplifies input/output distribution
- Configures easily
- Supports failsafe mode if communications between devices is lost

- Simplifies data mapping, incorporates drag and drop graphical user interface, and uses copy-and-paste to reduce data point selection effort
- Cost-efficient, lesser time to commission and test
- Provides authenticated protection against man-in-the-middle attacks
- Incorporates a built-in design that does not require additional application on the RTU or flow computer to run.

Capacity

- Each subscriber can network with up to 10 publishers
- FB3000 RTUs can act both as publishers and subscribers
- FB2200 and FB1200 flow computers can act as publishers
- Supports 5000 points per Ethernet port per subscriber (two ports on FB3000 provides 10000 parameters)
- Scan time is configurable from 0.5 seconds to 60 seconds



FBxNet — Subscriber and Publisher Devices

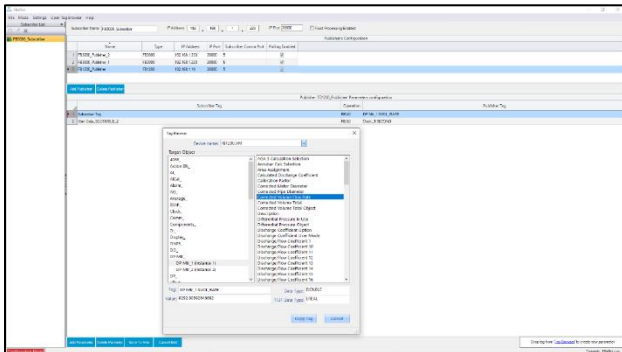
FBxNet Comm Fault Protection

FBxNet parameters can be set with fault handling mode option. When enabled, this activates a new parameter in the subscribers' database, allowing the selection of a desired value in an event of communications fault.

- Creates FBxNData_N parameters to act as landing spots in the publisher.
- Write Mode Fault Handling Limits:
 - 100 limit – FB1200/FB2200 acting as publisher
 - 5000 limit – FB3000 acting as a publisher
- Supported fault-handling modes:
 - Last Good (uses the last value successfully communicated)
 - Fixed (uses a customer-defined fixed value)

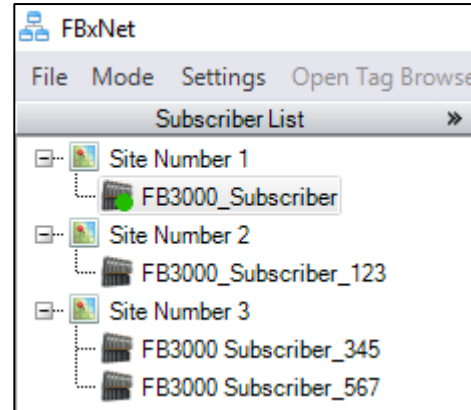
Configuration

- **Menu-driven configuration with drag-and-drop support:** The FBxNet intuitive graphical user interface (GUI) allows customers to quickly define the parameters to be shared between the subscriber and publishers. The user interface supports both drag-and-drop and copy-and-paste from each device's list of available parameters. Using the drag-and-drop creates a CSV file.



- **Bulk configuration:** For convenience when editing many parameters, FBxNet supports editing a comma-separated values (.csv) file. The .csv file can be opened in a spreadsheet software or text editor.

FBxNet displays a connection tree which allows you to easily configure site organizations. This makes it easy to support multiple field sites each with its own set of subscriber and publishers for P2P communication.



Installation

Installing FBxNet is a multi-step process using FBxConnect in Field Tools and requires a license. You should be connected to FBxConnect and use the FBxNet display to configure one or more Ethernet ports on your FB3000 subscriber device.

Note: If an FBxNet option does not appear on the menu, it means FBxNet is not licensed for that device.

To create a user FBxNet privileges, access the User Management option in FBxConnect. Each device in the FBxNet network must have an identical user with the same login credentials. A subscriber CSV file is needed that lists the names and IP addresses of the subscriber device and all its publisher devices, as well as the source and destination names of parameters to be exchanged over FBxNet.

Use Microsoft® Excel® or a text editor to create one subscriber file for *each* subscriber device. If you have three subscribers, you must create three CSV files (one for each subscriber).

Subscriber File Format

1	SubscriberName	SubscriberIPAddress	SubscriberIPPort				
2	NORTH_STREET	10.211.74.221	20000				
3							
4	PublisherName	PublisherType	PublisherIPAddress	PublisherIPPort	SubscriberCommPort	Enabled	
5	SubscriberTag	Operation	PublisherTag	SubscriberCommPort	Enabled	FixedFaultValue	FBxNDataIn
6							
7	PublisherName:ELM_STREET	FB3000	10.208.015.122			5	TRUE
8	User Data_1.FLOAT_5	READ	User Data_1.FLOAT_5	FAULT			106 FBxNData_1
9	User Data_1.DOUBLE_1	READ	User Data_1.DOUBLE_1	LAST_GOOD			0 FBxNData_2
10	User Data_1.DOUBLE_2	READ	User Data_1.DOUBLE_2	FAULT			33.33 FBxNData_3
11							
12	PublisherName:SEASIDE_DRIVE	FB1200	10.208.015.125			6	TRUE
13	User Data_1.DOUBLE_3	READ	User Data_1.DOUBLE_3	FAULT			45.23 FBxNData_4
14	User Data_1.DOUBLE_4	READ	User Data_1.DOUBLE_4	FAULT			32.1380556 FBxNData_5
15	User Data_1.DOUBLE_5	READ	User Data_1.DOUBLE_5	FAULT			36.8198888 FBxNData_6
16	User Data_1.DOUBLE_6	READ	User Data_1.DOUBLE_6	FAULT			41.5017222 FBxNData_7
17							

Subscriber CSV File in Excel

```
SubscriberName,SubscriberIPAddress,SubscriberIPPort
MyFB3000,10.208.15.82,20000
PublisherName,PublisherType,PublisherIPAddress,PublisherIPPort,SubscriberCommPort,Enabled
SubscriberTag,Operation,PublisherTag
PublisherName:MyPublisher1,FB1200,10.208.15.83,,5,TRUE
,User Data_5.FLOAT_1,READ,User Data_5.FLOAT_1
,User Data_2.LONG_7,WRITE,User Data_1.LONG_1
,User Data_1.SHORT_1,READ,User Data_1.SHORT_1
PublisherName:MyPublisher2,FB2200,10.208.15.84,,5,TRUE
,User Data_5.FLOAT_1,READ,User Data_5.FLOAT_1
,User Data_2.LONG_7,WRITE,User Data_1.LONG_1
,User Data_1.SHORT_1,READ,User Data_1.SHORT_1
PublisherName:MyPublisher3,FB2200,10.208.15.85,,5,FALSE
,User Data_5.FLOAT_1,READ,User Data_5.FLOAT_1
,User Data_2.LONG_7,WRITE,User Data_1.LONG_1
,User Data_1.SHORT_1,READ,User Data_1.SHORT_1
```

Subscriber File in Text Editor

Communication

FBxNet communication is a secure, proprietary protocol that operates via an ethernet transport mechanism.

The subscriber and publisher components of a FBxNet network must be connected through an ethernet link.

For complete installation instructions, refer to the *Field Tools Quick Start Guide* (D301703X412).

Security

Security is accomplished through authenticated communication. Every FB1200, FB2200, or FB3000 device that exists in an FBxNet network must have an identical FBxNet user configured. Each user in the network must share identical login credentials. You can configure the FBxNet user in FBxConnect Users Management.

Note: If you install Field Tools on a server, a multiuser license is available, which allows different users to run multiple instances of FBxNet at the same time.

FBxRemote I/O™

Because of the powerful flexibility of FBxNet, remotely located I/O can be configured as true remote I/O using a FB3000 I/O CPU (part number 3IOCPU; refer to the FB3000 product data sheet D301862X012). The I/O CPU does not support meter runs, control or applications but acts as a bridge, porting input and output signals from the remotely located chassis to the main or host FB3000. The FBxRemote I/O uses the same supporting hardware as the FB3000 (chassis, Mixed I/O modules, power blocks, and DIN rail mounting) to keep necessary spares at a minimum.

Requirements

The software is designed to run on a personal computer (PC), laptop, or a Windows tablet having the following minimum requirements:

- Intel® Core™ 2 Duo T7100 or similar (1.8 GHz or greater)
- Windows 7 Professional with Service Pack 1 (32- or 64-bit) or Windows 10 Professional (32- or 64-bit)
- 8 GB of RAM (Random Access Memory)
- 2.5 GB of available hard disk space
- Monitor with 1366 x 768 or better resolution
- Connection through Ethernet

FBxNet is a component of Emerson's Field Tools software suite. Field Tools software and user documentation is available as a free download from our [SupportNet](#) site.

Note: Activating a new SupportNet account may take up to 24 hours to process; plan your need for this software accordingly

For customer service and technical support, visit www.Emerson.com/SupportNet.

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