SNMP-STD

MSA | **fieldserver**
The Safety Company

Description

The SNMP-STD driver allows the FieldServer to transfer data to and from devices over Ethernet using the **SNMP Version V1 or V2c** protocol. The FieldServer can emulate a Server (SNMP Agent) or Client (NMS Network Management Station).

The FieldServer provides a generic MIB (Management Information Base) file that sets out the OID (Object Identifiers) structure. The FieldServer Enterprise ID is 6347. A selection of standard MIB-2 OID's are supported to allow interaction with popular Network Management packages.

When configured as an SNMP Agent (Server) the SNMP-STD driver allows SNMP Get, GetNext (walk) and Set commands to access Data Arrays using the Integer type. The SNMP v1 protocol does not make provision for Floats.

The SNMP-STD driver can send SNMP traps. The structure for SNMP Traps is provided in the FieldServer's generic MIB file.

The FieldServer also supports custom MIBs and the automatic generation of the MIB file. It supports setting a custom enterprise ID, object names and custom traps or informs. In custom configurations the FieldServer supports various data types as specified in the Data Types Supported section.

When configured as a Client, the FieldServer can read objects from the Server using Get, GetNext (walk) or GetBulk commands. The GetBulk command is very useful to transfer large amounts of data. The FieldServer can update objects in Agent using the Set command.

The FieldServer can accept any trap or inform as long as all the objects in the message are encoded with a full OID.

The Client side of the driver is considered as a custom configuration.

Connection Facts

FieldServer Mode	Nodes	Comments
Client	100	The SNMP driver can be configured to communicate with remote agents using unique Community Strings
Server	1-254	The SNMP driver can be configured as a single Server Node or multiple nodes using virtual IP Addresses each with unique Community Strings

Formal Driver Type

Ethernet, Client or Server

Compatibility

FieldServer Model	Compatible	FieldServer Model	Compatible
ProtoCessor	Yes	QuickServer FS-QS-10xx	Yes
ProtoCarrier	Yes	QuickServer FS-QS-12xx	Yes
ProtoNode	Yes	QuickServer FS-QS-20xx	Yes
ProtoAir	Yes	QuickServer FS-QS-22xx	Yes
		QuickServer FS-QS-3x10-F	Yes

Connection Information

Connection Type: Ethernet

Ethernet Speeds Supported: 10Base-T, 100Base-T

Devices Tested

Device	Tested (Factory, Site)
MG-Soft MIB Browser and Trap Ringer	Factory
Net-SNMP	Site
SNMP4J	Site

Communication Functions

Data Types Supported

Standard Configuration	
FieldServer Data Type	**Description (or Device Data Type)**
Integer	Signed integer (8 - 32 bits)
Octet String	Character strings (0 -255 characters)
TimeTicks	Timer values in 1/100ths of a second

Custom Configuration	
FieldServer Data Type	**Description (or Device Data Type)**
Integer	Signed integer (8 - 32 bits)
Octect String	Character string (0 -255 characters)
Displaystring	Null terminated character string (0 -255 characters)
Integer32	Signed integer (8 - 32 bits)
Counter	Unsigned integer (8 - 32 bits)
Counter32	Unsigned integer (8 - 32 bits)
Counter64	Unsigned integer (8 - 64 bits)
Gauge	Unsigned integer (8 - 32 bits)
Gauge32	Unsigned integer (8 - 32 bits)
Unsigned32	Unsigned integer (8 - 32 bits)
Bits	32bit integer representing 32 states
Timeticks	Time value in 1/100th of a second

MIB-2 Variables Supported

Many Network Management systems poll these variables to connect to the SNMP Agent.

OID	Description (or Device Data Type)
1.3.6.1.2.1.1.1	sysDescr
1.3.6.1.2.1.1.2	sysObjID
1.3.6.1.2.1.1.3	sysUpTime
1.3.6.1.2.1.1.4	sysContact
1.3.6.1.2.1.1.5	sysName
1.3.6.1.2.1.1.6	sysLocation

Read Operations Supported

FieldServer as a Client	FieldServer as a Server
get-request	get-request
get-next-request/ SNMP Walk	get-next-request/ SNMP Walk
get-bulk-request/ BulkWalk	get-bulk-request

Write (Control) Options Supported

FieldServer as a Client	FieldServer as a Server
set-request	set-request

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Unsolicited Operations Supported

Traps are event notifications and do not require acknowledgements. Inform-Request is a service that keeps sending V2-Traps until events get acknowledged.

Standard Configuration	
FieldServer as a Client	**FieldServer as a Server**
N/A	SnmpV1-Trap

Custom Configuration	
FieldServer as a Client	**FieldServer as a Server**
SnmpV1-Trap	SnmpV1-Trap
snmpV2-Trap	snmpV2-Trap
Inform-Request	Inform-Request

Unsupported Functions and Data Types

Data Types	Reason
MIB-2 variables not specified above	As the FieldServer is primarily a protocol convertor, these variables haven't been required to date

Unsupported Devices or Protocol Options

Protocol Versions	Details
SNMPv3	Other versions will be implemented as required

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