



FieldServer – A Powerful Solution

Road
Bridge



Communications
Bridge



Summary

- Interfaces to over 110 protocols including all the heavy hitters – BACnet, Lonworks, Metasys, Modbus, Rockwell
- Proven – Pentagon, South Pole ...
- Scalable
- Many Price Points to suit your product/project

Problem

- Many devices must talk to same controller
- No common protocol
- No common source of all hardware
- Not always simple Master to Slave
- Needs accessibility throughout the plant / building / system

Comunico con Bacnet

Scada/HMI



sprechen Sie Modbus?

Need to solve this problem ?

FieldServer's from Chipkin Automation devices connect devices using over 110 protocols, using 232/485/Fieldbus and Ethernet

Hola. ¿Usted entiende? Rockwell?

Controllers



Vous parlez GE EGD ?

¿usted habla Modbus?

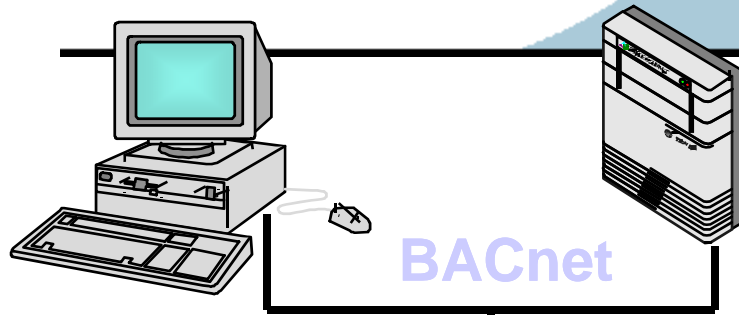
我沟通使用DF1



Field Devices – Sensors, Meters, Generators, HVAC

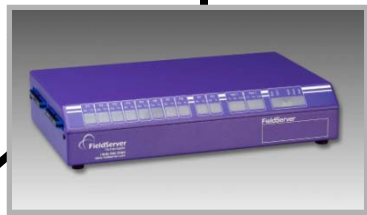


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Interoperability Examples Multiple Devices

Chillers, Boiler Controls, EMS, Fire Alarm Panels, VFD, PLC, other BAS



Multiple Vendors

Liebert, Tek-Air, Wonderware, Intellution, Square D, Notifier, Simplex, Cleaver Brooks, York, Omniflow, Honeywell, Johnson Controls, Siemens

FieldServer – A Powerful Solution

- A FieldServer is a protocol translation/gateway device.
 - Over 110 Protocols
 - Includes most protocols that are considered the 600lb gorillas in their sectors.
 - In the Building Management System (BMS) sector - BACnet, Lonworks and Metasys N2.
 - In the Industrial Automation Sector – Modbus/TCP and Ethernet/IP and of course the full suite of Rockwell and GE industrial protocols.

- FieldServer's are physical devices. Support for various protocols is achieved by firmware. Can support multiple Protocols.

- There can be more than 2 protocols on a single FieldServer.



Flavors of FieldServer

- **20 Series** – A single serial connection and a single Ethernet connection.
- **25 Series** – Two Serial Ports and 2 Ethernet Ports
- **30 Series** - 4 serial connections (2xrs232 2xrs485), two Ethernet ports.
- **40 Series** – 10 serial connections (8xrs232 2xrs485), two Ethernet ports and space for an adapter card for integration into networks like Modbus+ or DH+.
- **SlotServer** – Rockwell ControlLogix chassis module for 5600 series Rockwell products.
- **Protocessor** – Embedded form of FieldServer. A single serial ttl port for communication with Vendors CPU and either serial or Ethernet ports on the field side of the device.



FS40



FS30



Protocessor



SlotServer



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Chipkin Automation Systems (CAS)

- Approved Integrator
- FieldServer experts to source code level. We have developed over 40 of the FST Drivers.
- Get expert support faster. CAS provide 2nd tier techs support to FieldServer.
- Practical Experience. Installs in factories, hospitals, commercial buildings, data centers, on 4 continents.
- Provide support using Remote Desktop / gotomeeting / gotomypc. Knowledge, Forums and Articles, Phone, Scopes, Logging tools, converters and interfaces
- Free Modbus Software from CAS
- BACnet Explorer, BacSpy and BacWatchDog software tools from CAS

FieldServer Drivers

- ... over 110 protocols and counting

- Protocol not here ?
- No problem – we can develop from scratch.
- Recent Additions for customers
 - Federal Signal Ultravoice
 - VS900 Paging System

Industrial Protocols

- Modbus (Full family of protocols)
 - ModbusRTU
 - ModbusTCP
 - ModbusAscii (Jbus)
 - MB+
 - OmniFlow

- Rockwell (Full family of protocols)
 - DF1
 - Ethernet/IP
 - CSP (Legacy Ethernet)
 - ControlNet
 - DH+

- GE-Fanuc (Full family of protocols)
 - SNP
 - SNPx
 - SRTTP
 - EGD
 - Mark IV Speedtronic

- Siemens
- Omron
- DNP3
- Opto22
- Profibus Slave / Master
- DeviceNet Slave / Master

FieldServer Drivers

Fire Alarm Panels

- Simplex
 - Simplex 4100
 - Simplex 4100u
 - Simplex 4020
 - Simplex TFX Minerva
- Siemens Fire Safety
 - MXL,
 - FSI,
 - XLS,
 - Cerberus
- Edwards EST
 - EST3
 - Quickstart
- Gamewell
 - FCI-E3
 - FCI-7100
 - FCI-7200
- Grinnell
- Fike Cheetah
- Sillent Knight
- Spectronic Fire Alarm

➤ Fire Alarm Panels Continued

- Notifier
 - Notifier 1010
 - Notifier 2020
 - Notifier AFP
 - Notifier AFP 200
 - Notifier AFP 300
 - Notifier AFP 400
 - Notifier AFP600
 - Notifier INA
 - Notifier NFS
 - Notifier 3030
 - Notifier NFS2
 - Notifier 3030
 - Notifier NFS2 NCA
 - Notifier 640,
 - Notifier NFS2 640
 - Notifier NFS-320
 - Notifier Italia
 - Notifier AM6000
 - Notifier CEI-ABI
 - Notifier NCA
 - Notifier NIB
- Vesda
 - National Time & Signal
 - Secutron Modul-R
 - Aritech Fire Panel
 - Ziton Fire Panel

FieldServer Drivers

HVAC System Protocols

- sTrane BCUs and Summit workstations
- Alerton
- Delta Controls
- Andover Controls
- Siemens
- Honeywell and Automation Logic
- DataAire
- TeKAir
- York Chillers
- McQuay
- Carrier
- Barrington MicroStar
- Misubish CHC Air Conditioning
- Rapid Engineering ICSii
- Canatal
- Stulz
- Lennox
- WattMaster
- Liebert

Building Automation Protocols

- Lonworks
- BACnet
 - IP
 - ETHERnet
 - PTP
 - MSTP
 - Arcnet
- Metasys
 - N2
 - DX9100
- TAC Inet
- WebServer (HTTP)

FieldServer Drivers

Other Protocols

- Catterpillar CCM
- Lutron
 - eLumen
 - eLumen Machine
 - Grafik 6000
 - microWatt
- Scale
- XML
- SNMP
- Telnet
- ASCII
- Federal Signal
- Armstrong FS403
- TOA VS900
- Trane XML Schedule
- GE TLC Total Lighting
- ATMI ACM and TGM
- Vital Harmon Logic Controller
 - Genisys
 - SCS-128 (Safetran)
- Hach Ultra MetOne Particle Counters
- Hanning & Kahl HCS-R
- Honeywell Analytics
 - IR-148-8 8-Channel
 - System 16
- Ilco 9000 Milenium
- Pneumatic Products ADC Heatless
- Russelectric Model 2000
- Setra Digital Pressure Gauge
- United Power FIM (UPS)
- Veeder Root Fuel Pumping
- Weightronix Controls
- WS3000 TABS - Super Scanner
- Networked Robotics NTMS4
- Convia Global Gateway
- NTP - Time Protocol

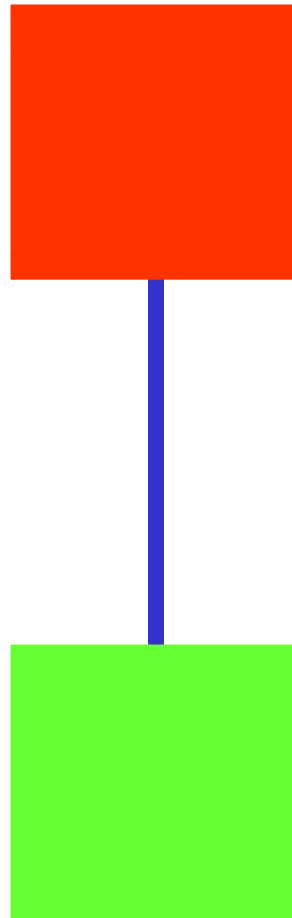
Client/Server Model

Poll-Response

Active Clients read data from passive servers.

Producer-Consumer

Passive Clients consume data from active servers.



**Client/
Master**

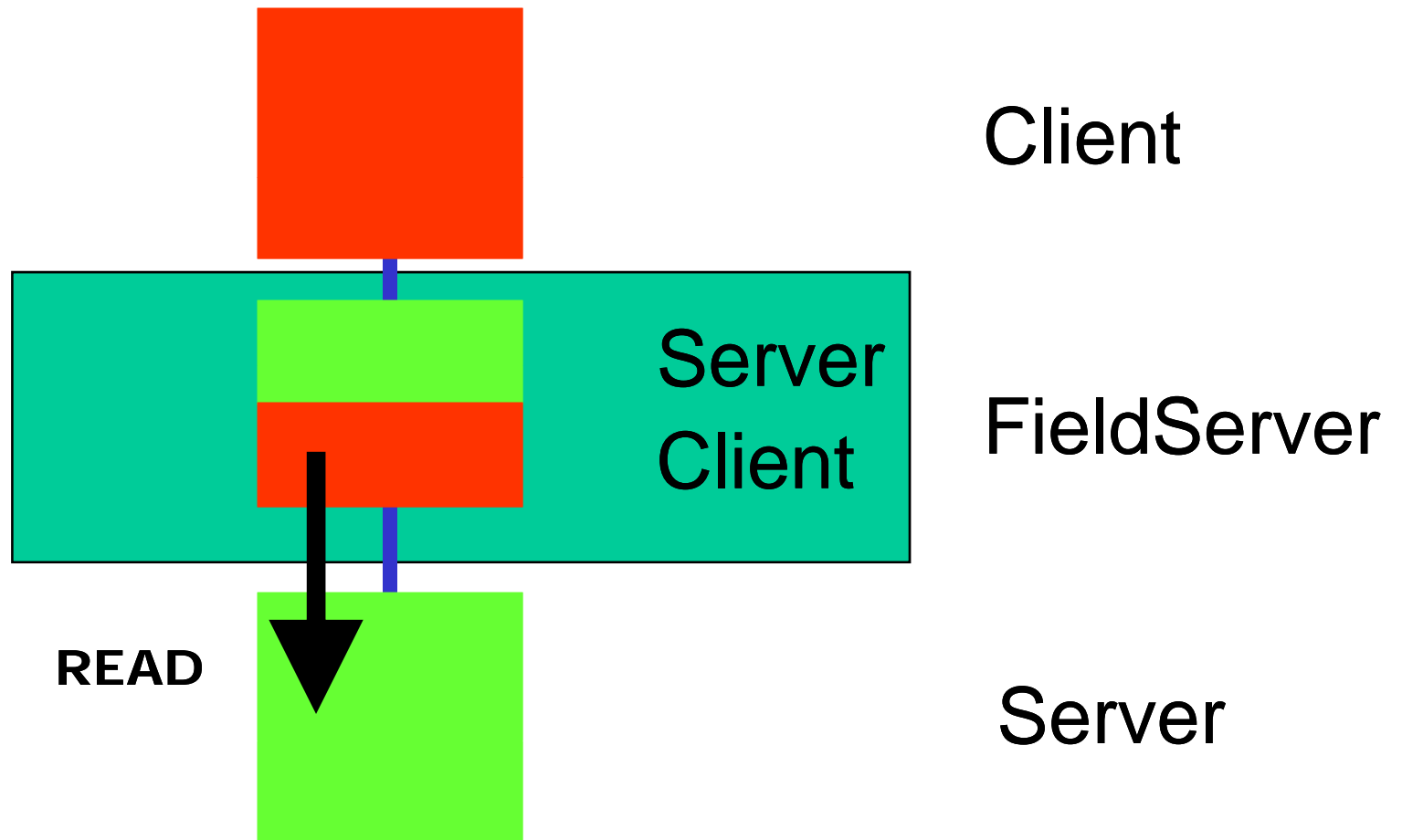
**Server
/Slave**

Client/Server Model Extended

The FieldServer acts as a go-between. Reading data on one protocol and serving data on another protocol.

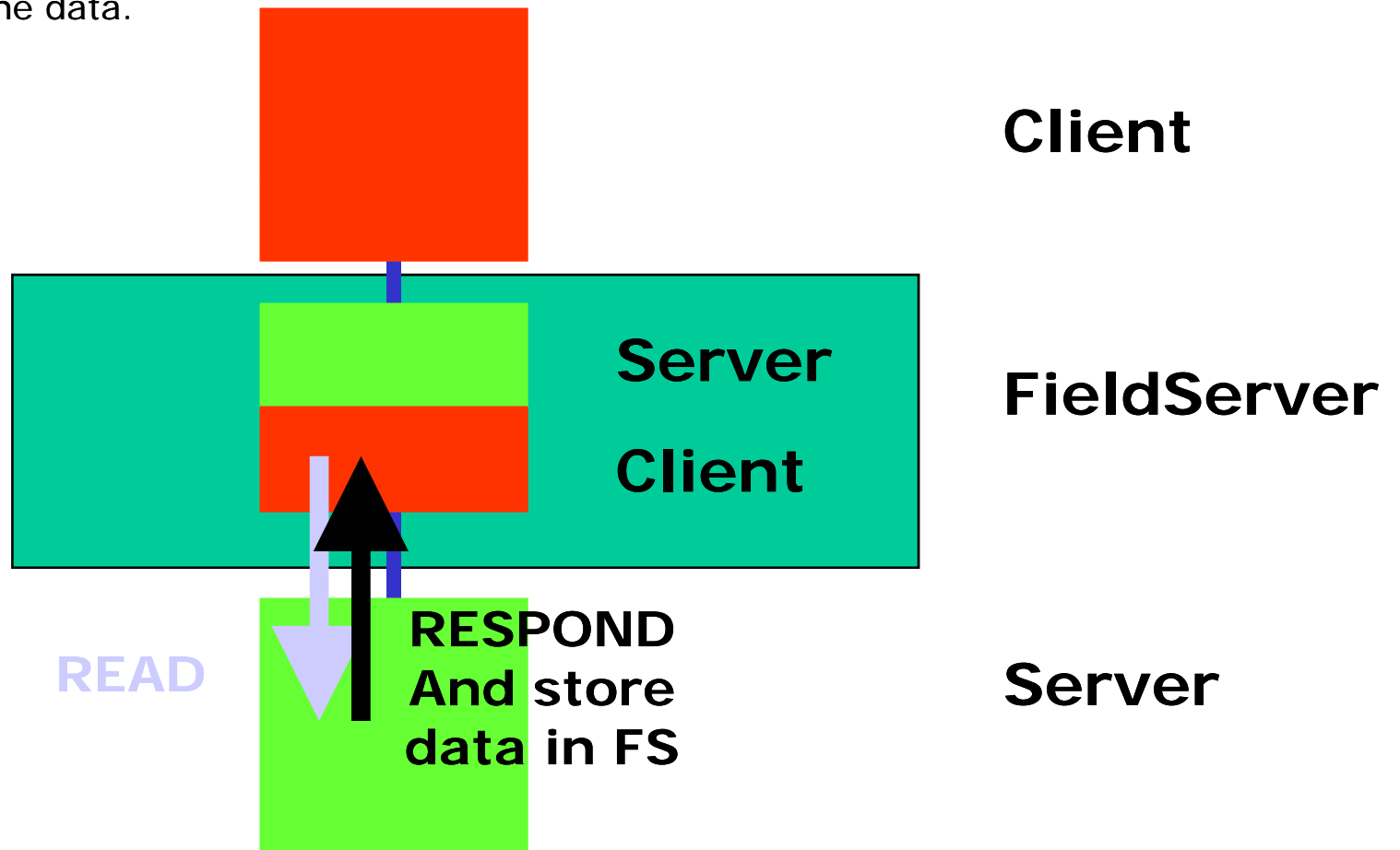


Client side of the FieldServer reads data from the field device.

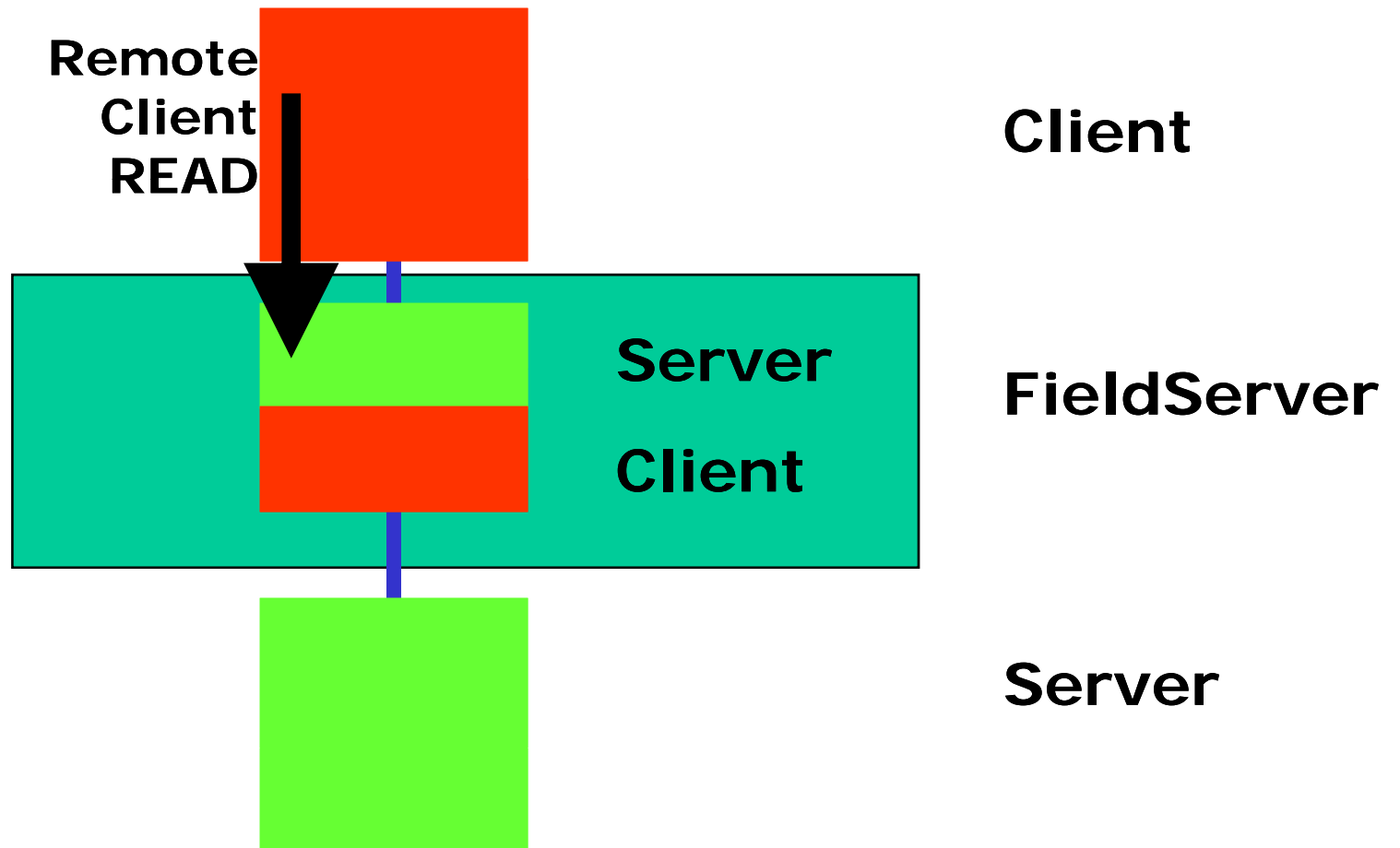


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Field device responds. The FieldServer extracts the data from the payload and stores the data internally and time stamps the data.

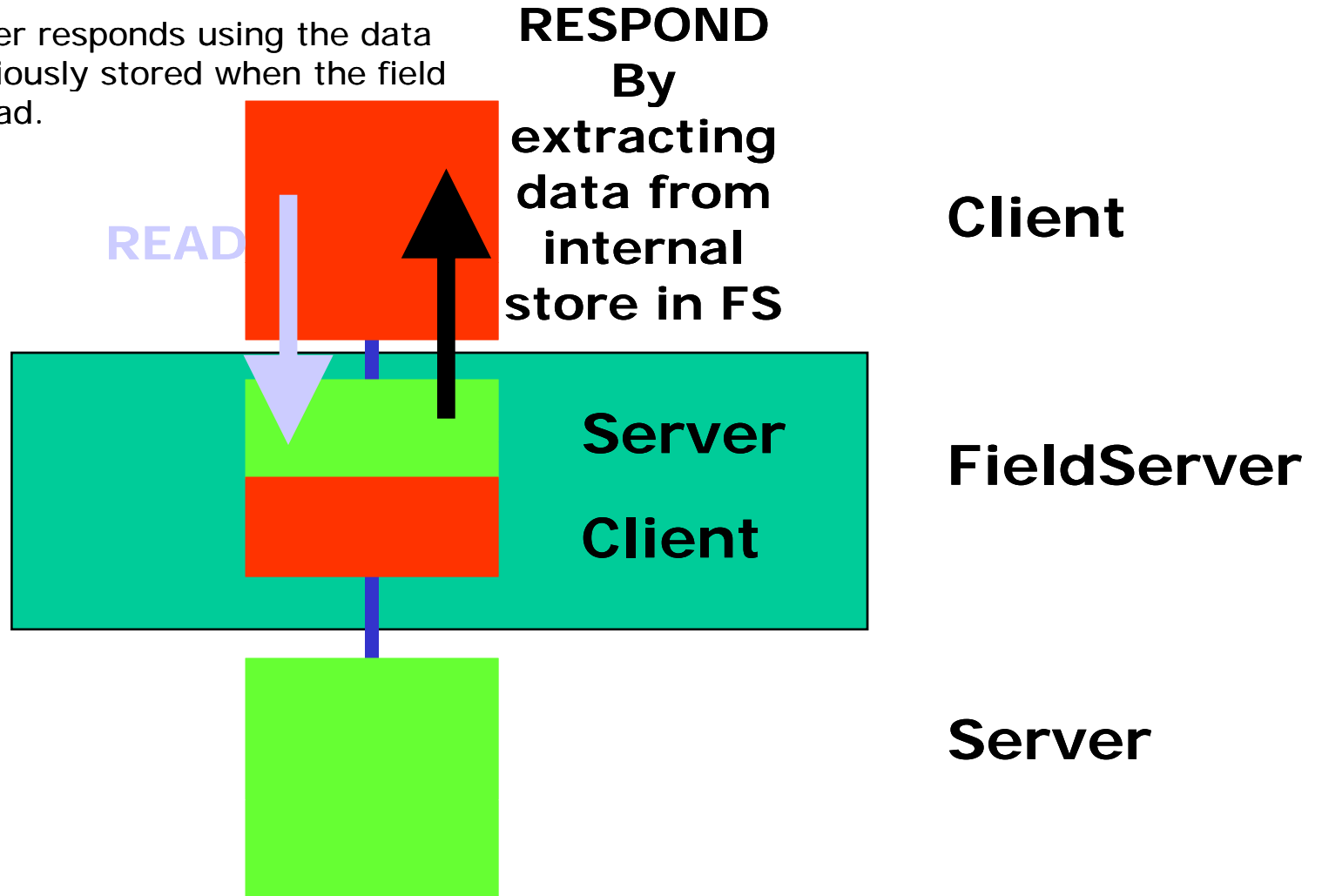


Now, the remote client reads data. It doesn't know its not directly connected to the field device.



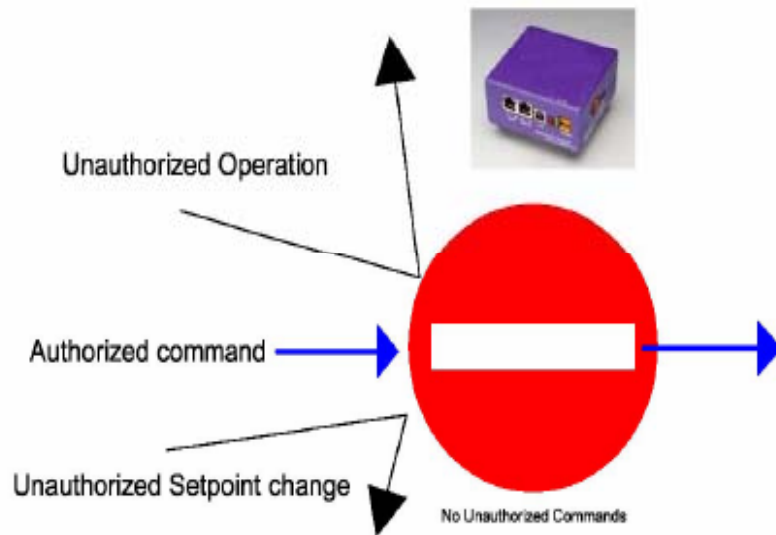
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The FieldServer responds using the data that was previously stored when the field device was read.



FieldServer Functions

- Read
- Read on Startup
- Write
- Write On Update/Change – Triggered
- Scaling
- Math
- Logic
- Connection Status
- Driver operating / error stats
-

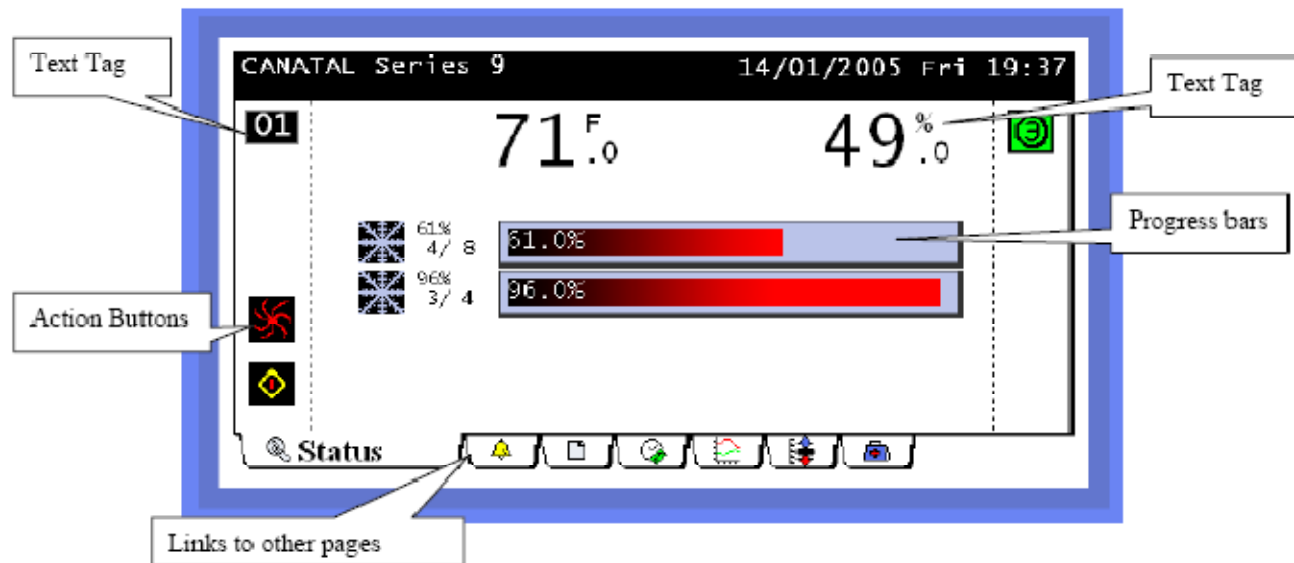


Protocol Security Gateway

- **Stop Data Communication Intruders In Their Tracks**
- If your investment / infrastructure / your customers is protected by a device that has a Modbus serial port. How can you really protect them? Modbus does not provide any security / authentication. If one person can change a set point or change an operating parameter then so can any one else.
- The *Protocol Security Gateway* can stop intruders in their tracks. Prevent 'write' commands passing from one side of the gateway to the other unless authorized. Authorization is done for one / any of the following parameters: Destination Node, Memory Address, Source Node, Source IP, Destination IP, Time Interval. You can permit all 'reads' or apply the same authorization to 'reads'.

FieldServer WebServer

- Serve Web Pages
- Animate pages with real time data

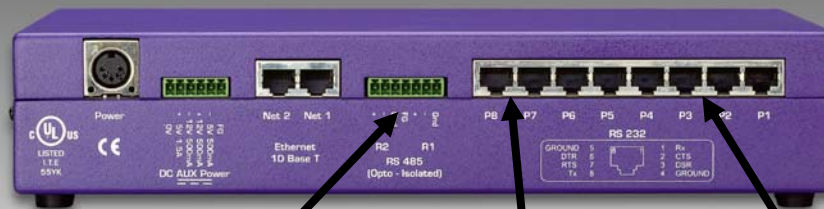


FieldServer Installations

- US Navy, Pentagon
- South Pole, Caterpillar Generator
- Hospitals
- Federal Buildings
- Campus
- Factories
- Oil Platforms, Hibernia
- Data Centers
- 7 continents

Easy Connections

Internal ISA bus
for off-the-shelf
communication
adapter cards



Two 10BaseT
Ethernet ports

Two opto-isolated
RS485 ports

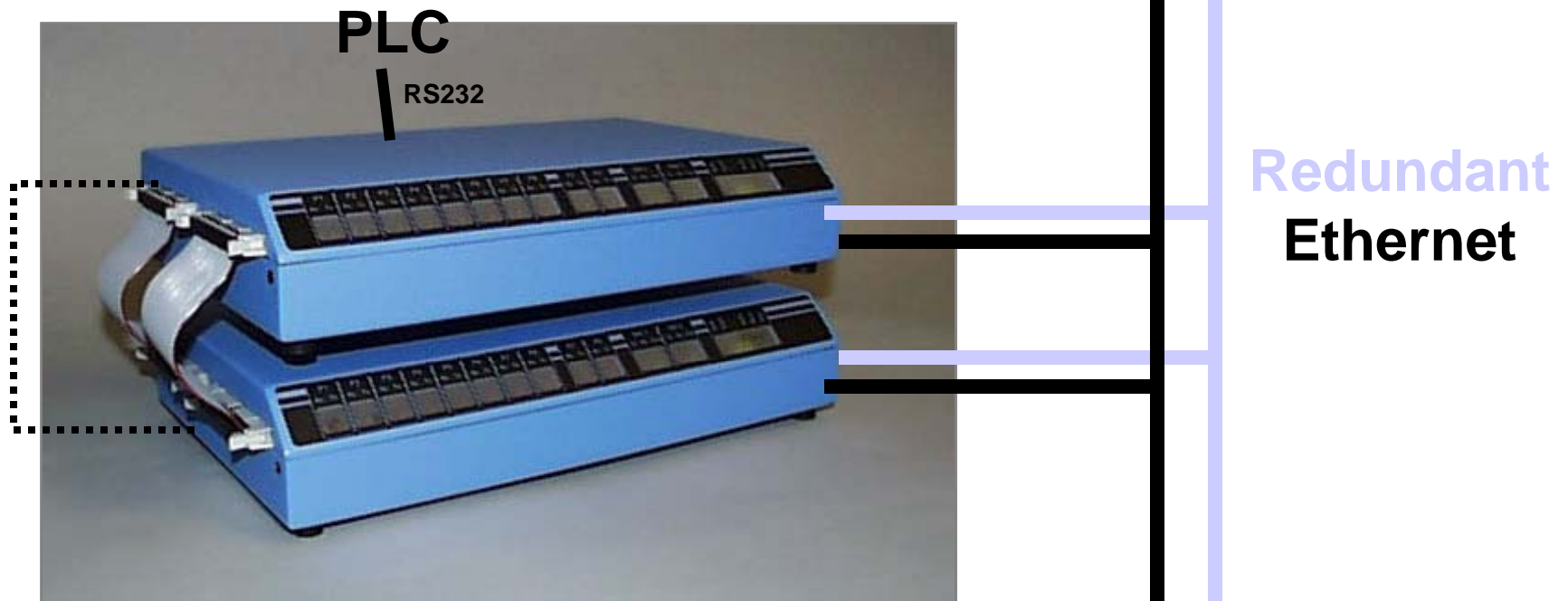
Eight
RS232 ports

Hot Standby

Ribbon cables copy all 232/485 data so both FieldServer's see the same data.

FieldServer's monitor each other via serial/Ethernet.

Many configuration/redundancy options.





Chipkin
Automation Systems

FieldServer – A Powerful Solution



FS-Data Tap

- Data Tap is installed between two nodes using most Physical layers
- FieldServer “eavesdrops” on the data passed between two legacy nodes
- Data is made available to other devices

Thank you for your time.

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