



## Electronic Flow Computer Monitor Scanner

### Overview:

The Electronic Flow Computer Monitor Scanner is a cost-effective and scalable application providing supervisory control capabilities in conjunction with gathering real-time data and retrieving archived EFM records.

### Features

- Polling for Real-time Data
- Polling for Alarm/Event
- Polling for Historical Data
- Demand/Scan Polling
- Multiple Protocol support
- Fisher ROC
- Enron Modbus ASCII
- MS SQL Server database support
- Multiple Export Data Formats:
  - CFX
  - PGAS
- Multiple Communication types
  - Serial (point to point or multi-drop)
  - TCP/IP (sequential or simultaneous)
  - Dialup
- OPC Support

Screenshots:

**Parijat HMI Client - [Real Time Poll]**

File Real Time Poll Events/Archives Window Display

Device: 12

Current Poll Settings

Device Polled: 12

Current Poll Status: **Currently Polling**

Scan Time: 1 ms Timeout: 3000 ms

Refresh

Timer Settings

**Timer Running**

Toggle Timer

OK

PointDescriptor	PointValue
Mod 7200	0
Mod 7210	0
Mod 7300	0
Mod 6200	0
Mod 6300	0
Mod 8100	0
Mod 1000	0
Mod 7400	0
Mod 7333	0
Mod 4400	0
Mod 53	0
Mod 54	0
Mod 55	0
Mod 56	0
Mod 57	0
Mod 58	0
Mod 59	0
MMBTU Flow	1400
MCF Volume	800
Pressure 1	70
Header Press	31745
	0

Unacked Alarms: 0

Server GMT Time: 04/12/2004 22:53:06

Connected to Server

**Parijat HMI Client - [Events/Alarms, Archives]**

File Real Time Poll Events/Archives Window Display

Device: 12

Schedule Enabled

Get Events

Get Archives

Select Time:

From: 10/28/2003 5:47:57 PM

To: 4/12/2004 5:47:57 PM

Get Data

Timestamp	Device ID	Bit Map	Register	Time	Date	Old Value	New Value
12/25/2003 0	12	513	7001	172304	122503	7100	1111
12/25/2003 0	12	513	7001	172322	122503	1111	8888
12/25/2003 0	12	513	7002	172309	122503	800	2222
12/25/2003 0	12	513	7002	172328	122503	2222	4123
12/25/2003 0	12	513	7200	172309	122503	800	2222
12/25/2003 0	12	513	7210	172315	122503	120	44444
12/25/2003 0	12	513	7001	172304	122503	7100	1111
12/25/2003 0	12	513	7001	172322	122503	1111	8888
12/25/2003 0	12	513	7002	172309	122503	800	2222
12/25/2003 0	12	513	7002	172328	122503	2222	4123
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12/25/2003 0	12	513	7002	172309	122503	800	2222
12/25/2003 0	12	513	7002	172328	122503	2222	4123

Unacked Alarms: 0

Server GMT Time: 04/12/2004 22:53:28

Connected to Server

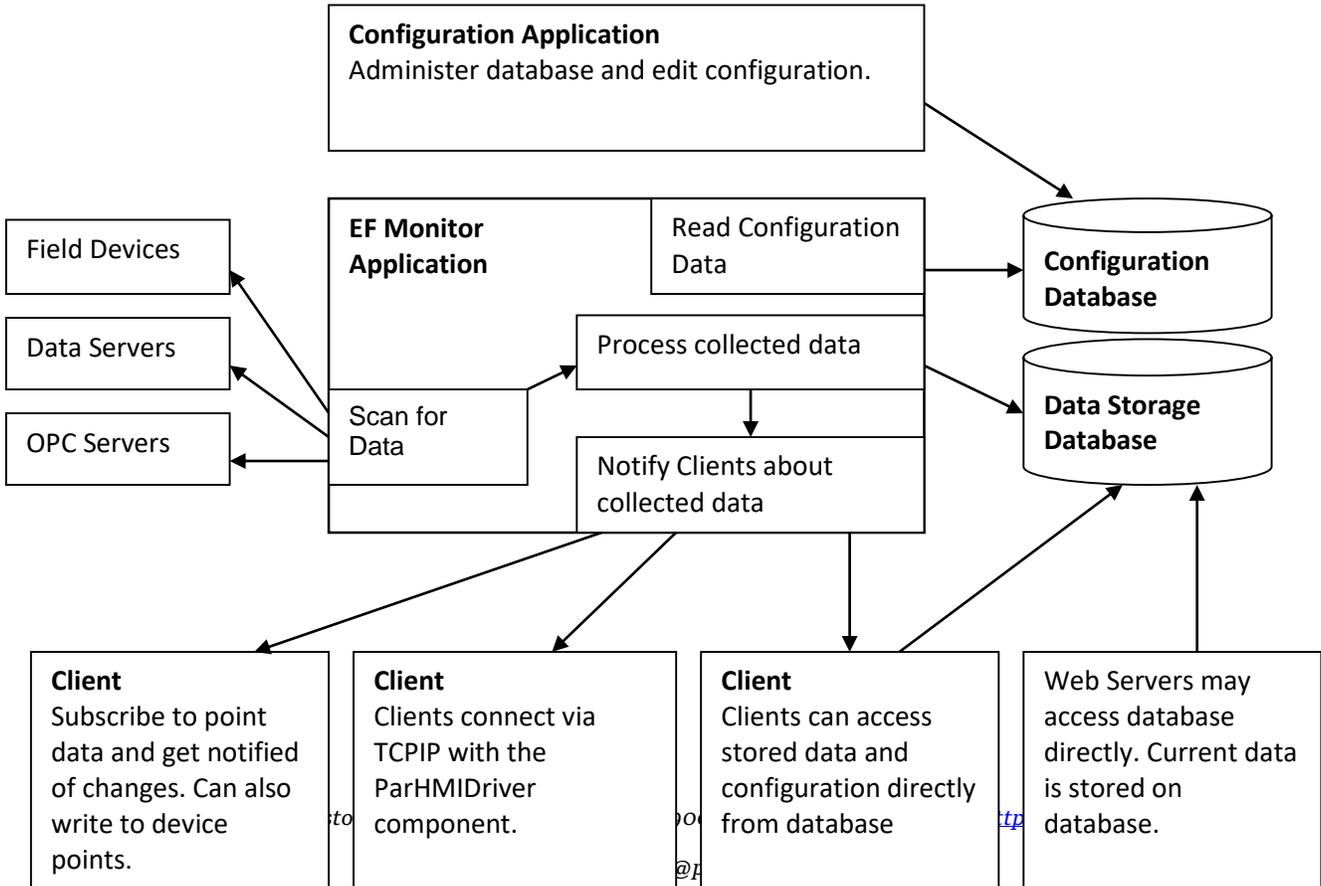
**Architecture:**

The EF Monitor application is built using the Parijat HMI Development System in VB.NET. The application is designed to poll any smart devices, Modbus slaves, Electronic Flow Meters etc., and store historical data as well as provide real time polling capability.

The system consists of three main applications.

- EF Monitor or polling engine
  - This application implements the core SCADA capability for the system.
- HMI Configuration
  - This application allows users to configure the system and database.
- HMI Clients
  - This application is the primary user interface. Clients may be built from the core components of this application to extend the basic capabilities. Clients may also be extended to support alternative platforms such as mobile devices (Mobile phones, Tablet PC, etc).

**Architecture of Parijat Electronic Flow Monitor Scanner**





### Primary components:

Each component is machine independent. The optimum location of each component depends on network, device types and other factors.

### EF Monitor:

- The core of the EF Monitor is the Parijat Polling Engine (Scada Server) that collects and stores data from field devices
- Runs as service independently of users logged on or off.
- Gather data from meters
  - FisherRoc
  - Modbus
  - OPC
- Store historical data into a single database
- Process alarms and takes actions including write values to device points.
- Process communication errors
- Relay data from a point to another point as an output.
- Update 'calculated' points. Collect averages and other type of aggregate data.
- Send updates to clients
  - Using client driver for Client/Server communications, any application developed with .NET may be a client, including mobile devices.
  - Communication can be extended to provide custom messages to and from clients.

### HMI Clients:

- Clients may be on a variety of .NET-supported platforms including mobile devices.
- Extensible client/server communication.
- Standard HMI functionality.
  - Monitor/Control plant tags
  - Alarms
  - Trends
- Real time meter scan functionality
- CFX, PGAS Export functionality

10/4/16

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