Parijat Field Device Polling Engine

Parijat Field Device Polling Engine (PFDPE) is a cost-effective and scalable application providing supervisory monitoring & control capabilities in conjunction with gathering real-time data and retrieving data records from slave devices.

Features

- Polling for Real-time Data at a configurable speed
- Polling for Alarm/Event
- Polling for Historical Data
- Demand/Scan Polling
- Multiple Protocol support – any Parijat device drivers or a 3rd party OPC server
- MS SQL Server database used to store configuration, history & archives data.
- Multiple Communication types
- Serial (point to point or multi-drop)
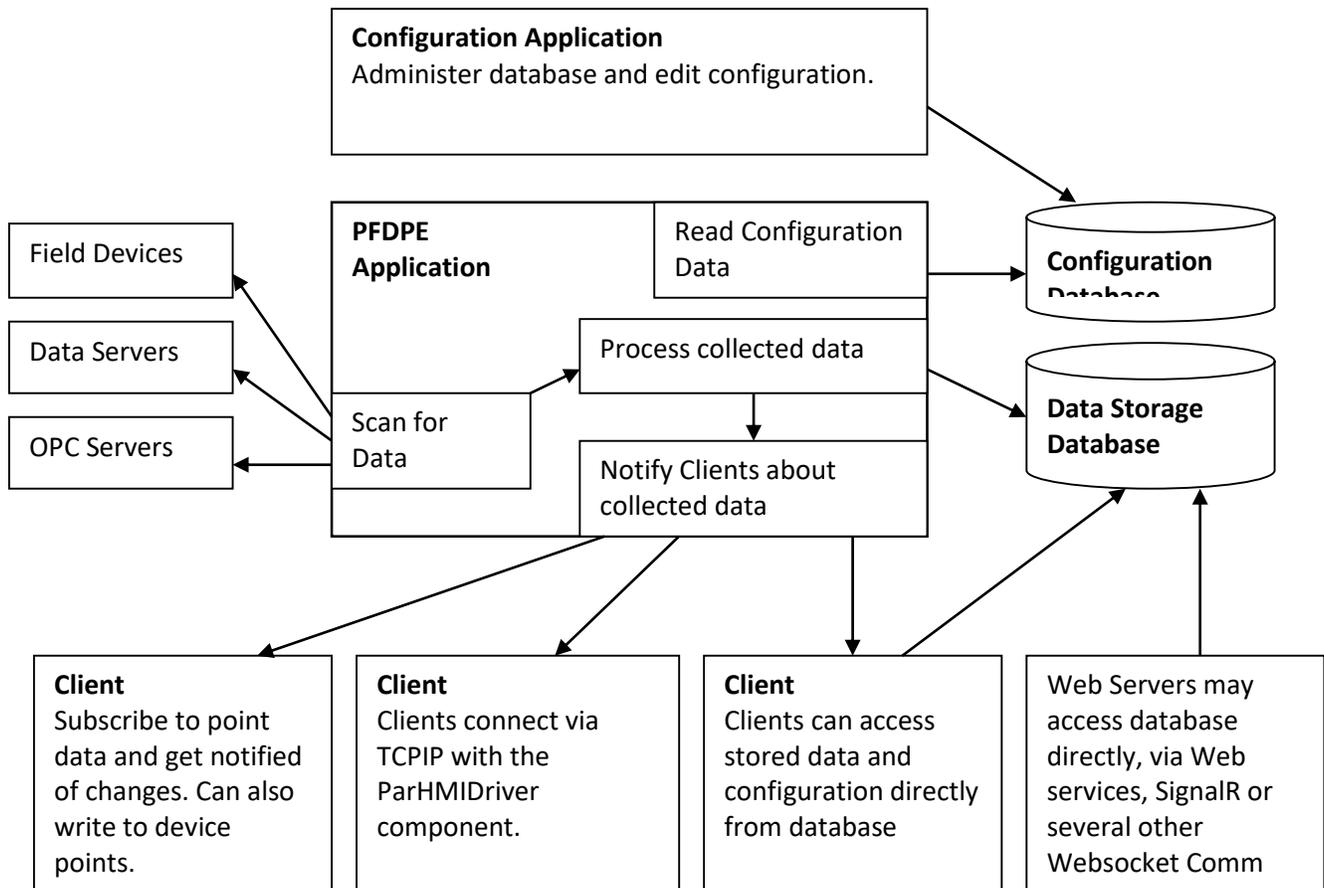- TCP/IP (sequential or simultaneous)
- Dialup

Architecture

The PFDPE 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 with a lot of flexibility & features.

The system consists of three main applications.

- Scada Server or polling engine
1. This application implements the core SCADA capability for the system.
2. Unlimited Field devices, Types, & Tags/Points from each Device (Tested with thousands of Field Devices & millions of Tags)

- Configuration
1. This application allows users to configure the system and database. The native database used is latest version of MS SQL Server (or pick any older version back to MSDE). Support for other databases may also be provided.
2. Edit , define, import/export the polling related data, field device data, handling, processing details etc.

- HMI Client(s)
  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). Unlimited clients, users & unlimited displays.

Architecture of Parijat Field Device Polling Engine

Configuration Application
Administer database and edit configuration.

PFDPE Application	Read Configuration Data
	Process collected data
Scan for Data	
	Notify Clients about collected data

Field Devices

Data Servers

OPC Servers

Configuration Database

Data Storage Database

Client
Subscribe to point data and get notified of changes. Can also write to device points.

Client
Clients connect via TCPIP with the ParHMIDriver component.

Client
Clients can access stored data and configuration directly from database

Web Servers may access database directly, via Web services, SignalR or several other Websocket Comm

Primary components

Each component is machine independent. The optimum location of each component depends on network, device types and end-user application specific issues.

PFDPE

- The core is the Parijat Polling Engine (Scada Server) that collects and stores data from field devices
- Runs in MS Windows server or client. (latest version to 2003) 64-bit is preferred but runs in 32 bit also.
- Multi-threaded using latest .NET frameworks.
- Rums in virtual server environment also.
- Runs as an executable app or as a service independently of users logged on or off.
- Gather & Store data into a single database
- Process alarms and takes actions including write values to field device points.
- Process communication errors
- Relay data from a point to another point as an output or after some logic or conditioning.

- 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.
1. Monitor/Control plant tags
2. Alarms
3. Trends
- Real time demand scan functionality

10/4/16