

Case Study: Memobus Driver for GE Cimplicity

Provider Name	:	KALKI Communication Technologies (P) Ltd.
Client Name	:	Fortune 100 Multi-national PLC/SCADA OEM
Project Title	:	Cimplicity Native Driver for Yaskawa Memobus Protocol

The Problem

The client required the Yaskawa PLC's to communicate with the Central Cimplicity SCADA over Ethernet TCP/IP as part of their Crane Management Project. The Yaskawa PLC's supported Memobus protocol. Crane Management System SCADA was based on Cimplicity HMI from GE Fanuc Systems. Since Cimplicity does not have a native Memobus driver, it was required to implement Memobus Protocol as a native Memobus driver on Cimplicity.

The Solution

The stated driver was developed using the following Resources:

1. Cimplicity Device Driver Toolkit
2. Memobus Specifications Manual
3. Microsoft C Compiler

The Cimplicity Device Driver Toolkit supports a set of Application Program Interfaces (API's). These API's specifies the entry point into Cimplicity Device Data Acquisition System. These API's include device poll routines, device data update routines, device initialization routines etc.

Memobus Protocol is a variant of the Modbus protocol and supports both serial and Ethernet TCP/IP interfaces. This specific project required the Memobus Communication over Ethernet TCP/IP. The Cimplicity Driver interface developed consisted of Memobus TCP/IP Connection Establishment, and Connection Closure, Data Retrieval based on the Cimplicity Poll Schedules as well as device and link healthiness.

The Driver Consisted of the complete Memobus Specifications for read and write of MW, MB and IW, IB registers. The output register read/write were not supported, and were implemented through read/write to the MW, MB registers and processing at the Ladder Logic Level on the Yaskawa PLC.

Technology Used:

- Microsoft C Compiler
- Cimplicity Device Driver Toolkit