



CASE STUDIES OF MAPUSOFT SOLUTIONS

Industrial/Automation

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CASE STUDY

1

Fuji Xerox, Japan

BACKGROUND

Fuji Xerox Company, Limited is a joint venture partnership between the Japanese photographic firm Fuji Photo Film Co. (75%) and the American document management company Xerox (25%) to develop, produce and sell xerographic and document-related products and services in the Asia-Pacific region. Its headquarters is in Tokyo, Japan. Fuji Xerox is the world's longest running joint venture between a Japanese and an American company.

Fuji Xerox, Japan was exploring alternatives to port their Multifunction Printer product-line, with a code base of over 10 million lines of code, away from the VxWorks operating system. Fuji wanted to move the code from VxWorks to a Linux platform in order to take advantage Linux's powerful networking features and also eliminate the run-time royalty cost associated with VxWorks. In addition to migrating the code, Fuji Xerox must retain the ability to do considerable new software development work.

PROJECT

Port their Multi-function Printer/Scanner embedded software code base from VxWorks to the Linux operating system. Harden Linux to behave and perform like a Real-Time Operating System (RTOS) so that new application development using Linux/POSIX API would provide stability and performance.

PRODUCT



VxWorks OS Changer Porting Kit and Linux Optimization Kit for a Linux Target

SOLUTION

By using OS Changer, Fuji Xerox was able to successfully migrate their VxWorks legacy code to the Linux platform, within budget and schedule. Linux OK optimization features provided enhanced performance of the Linux application that was integrated with the existing legacy application. Utilizing a product solution also allowed Fuji Xerox to assign its engineers to enhancing their code rather than spending time on unnecessary manual porting effort.

OS Changer & Linux OK were chosen because they made the project financially and practically feasible. The potential cost of manual porting the code, the number of developers needed and the time required to complete this project were all prohibited. In addition, OS Changer does not require changing the VxWorks code base. Linux OK offers VxWorks real-time threading and memory management features over Linux to ensure product performance on the Linux platform.



CASE STUDY

2

GE Intelligent Platforms, Hyderabad, India

BACKGROUND

GE Intelligent Platforms is part of the GE family, which provides industrial software, control systems and embedded computing platforms to optimize the customers' assets and equipment. They work across industries, including manufacturing, water, oil & gas, mining, power, defense and aerospace. GE Intelligent Platforms was one of the first companies in the United States to become a certified ISO 9001 manufacturer. They are headquartered in Charlottesville, VA.

For the past 25 years GE's traditional PLCs provide powerful solutions to mid-range, stand-alone or distributed industrial control. VersaMax PLC is one of its first solutions for control and distributed I/O. The VersaMAX PLC product line was such a success that the customers demanded a longer product life and support from GE and was not willing to upgrade to a different controller systems. Previously the VersaMAX PLX product family was running on the pSOS platform, however the chip vendor is no longer supplying the main processor. GE was looking to find an alternative chip vendor, however the new chip was not supporting the pSOS operating system. GE was looking for solutions which will enable them to keep the tried and tested legacy application code which worked perfectly for years and at the same time swap the processor chip which supported a NetOS/ThreadX environment.

PROJECT

A hardware obsolescence problem occurred due to the fact that the main processor chip used in the VersaMAX PLC controller product family had become unavailable. GE's customer demanded the same system when they placed a new large order. GE's VersaMAX product required new hardware and a modern operating system while keeping the original pSOS application unchanged. This created a significant challenge for GE; even if GE manually ported the code, the customer's requirement not to modify the original application code would not be met.

PRODUCT



OS Changer® Porting Kit for re-hosting pSOS applications on NetOS/ThreadX

CASE STUDY

2

GE Intelligent Platforms, Hyderabad, India

SOLUTION

MapuSoft's OS Changer Porting kit allowed GE to migrate its important PLC application code to a new platform and operating system without re-writing/porting the code, thereby meeting GE's customer's requirements. The new product met GE's customers requirement for performance and stability.

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CASE STUDY

3

GE Power Systems & GE Electric, Canada

BACKGROUND

GE Power provides a broad array of power generation and energy delivery products to solve challenges. They work in several industries including renewable resources such as wind and solar, biogas and alternative fuels as well as coal, oil, natural gas and nuclear energy. They are headquartered in Schenectady, New York.

GE develops multi-functional power meters providing electric power automation functions. The primary purpose of these products is to collect, store and process real-world information and to perform automated control functions based on that data. These products also have communication capability for collecting and/or forwarding information from/to other devices. Some products may be equipped with a graphics display panel that provides a local operator interface. The product was working on an older pSOS platform release successfully for several years and GE wanted to first move this product to a different platform like MQX and then after many years to Linux.

First Project

Migrate multi-functional power gateway controller applications developed for pSOS operating system to MQX. The application is real-time and mission critical and needs to support at least the same or better performance after switching the OS. The project involved offering a custom solution involving faster messaging and support for a specific and older version of pSOS operating platform.

Second Project

Migrate multi-functional power gateway controller applications developed for pSOS operating system to Linux. The application is real-time and mission critical and needs to support at least the same or better performance after switching the OS.

Product



OS Changer® Porting kit for re-hosting pSOS application onto MQX and Linux platforms



CASE STUDY

3

GE Power Systems & GE Electric, Canada

SOLUTION

MapuSoft's OS Changer Porting kit allowed GE to successfully migrate its multi-function power gateway controller applications from pSOS to MQX and then to the Linux operating system. In both instances, the code was migrated without code re-write and with maintaining or exceeding the stability and performance of the original system.

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