eCosCentric Middleware

eCosCentric provide a wide range of eCosPro® compatible middleware add-on components that enable you to enhance your embedded device's functionality with fully-featured, optimized and proven solutions; whilst minimising your own development time and effort. Full source code, documentation and support is provided for all middleware developed by eCosCentric.

eCosPro-USB USB host and device stacks

The USB host and device stacks focus on delivering standards conformance and reliability in a minimal resource footprint. Class support includes MST (Mass Storage), RNDIS (Microsoft Remote Networking Device Interface Specification), CDC-EEM (Ethernet emulation) & CDC-ACM (Serial emulation). Each class is fully integrated into the relevant eCos subsystems, APIs and configuration system. Compliant with USB 1.1 and 2.0 standards the stacks support high speed (480 Mb/s), full speed (12 Mb/s) and low speed (1.5 Mb/s) connections.

eCosPro-mDNS Zeroconf/Bonjour network device configuration and discovery

The mDNS package extends eCosPro's resource efficient lwIP stack, radically simplifying the process of installing, discovering and accessing networked devices. Apple Bonjour Conformance Test certified, the service has been qualified with a wide range of DNS-SD clients including iOS®, Android®, Bonjour on Windows®, Avahi on Linux® and OS X®. Supports static, IPv4LL link-local (auto-IP) and DHCP IP address assignment, with dynamic service addition and removal. Compatible with both IPv6 and IPv4 based networks.

eCosPro-SecureSockets OpenSSL toolkit

A comprehensive port of OpenSSL geared towards the needs of resource constrained devices. It provides Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS) protocols, as well as a general purpose cryptography library. eCosCentric actively works on security fixes and errata, rapidly delivering tested updates in response to today's dynamically changing security landscape.

eCosPro-SecureShell SSH-2 compatible Secure SHell daemon

A SSH-2 compatible Secure SHell daemon that enables secure network access to embedded targets for configuration, control and data transfer. The SSH protocol provides confidentiality and integrity of data and uses public-key cryptography to authenticate incoming connections. Example applications, including an extendable shell and host-based utilities are supplied in addition to the cryptographic libraries. Public-key and password authentication are supported. Encryption algorithms include 3DES, AES128, AES256, blowfish, twofish128 and twofish256.

eCosPro-CAN Controller Area Network API and drivers

Controller Area Network drivers for automotive and industrial applications. The CAN package combines a straightforward API with device drivers for a range of external and on-chip CAN controllers. Supported devices include the NXP SJA1000, Freescale PowerPC and ARM FlexCAN modules, and CAN peripheral blocks found on many Cortex-M class devices from ST, Atmel and Freescale.

eCosPro-MMFS high performance multimedia file system

A high performance file system specifically designed for streaming high volume and time critical data. Typical markets are personal video recorders (PVR), set-top boxes (STB), hard disk based video cameras, instrument recorders, video surveillance products and similar high volume streaming applications.

www.ecoscentric.com/middleware

Partner Middleware

eCosCentric works with a range of industry-leading partners to deliver best-of-breed solutions to augment the run-time. Solutions have been carefully chosen to work alongside eCosPro, mindful of limited target resources and offer cost-effective licensing terms with the assurance of a pre-qualified solution direct from a trusted supplier.

YAFFS NAND flash file system

YAFFS is a high reliability file system designed and optimized for use with raw NAND flash devices. It is one of the most mature, reliable and widely used NAND file systems available today, and has been deployed in a diverse set of industrial, instrumentation and consumer products. YAFFS harnesses eCosCentric's NAND flash library which provides a portable device-independent interface to YAFFS for the reading, writing and erasing of NAND blocks, and handling of bad block management and error correction.

PEG™ Graphical User Interface toolkits

PEG Lite, PEG Plus and PEG Pro are a family of GUI libraries and toolsets to create visually appealing custom user interfaces. Suitable for a broad range of embedded devices from simple monochrome displays through to 32 bit colour with accelerated controllers and touch input. Design tools and APIs support internationalization, custom fonts and bitmaps, in addition to features such as alpha-blending, scaling, rotation, text and cursor overlays, buttons, animations and menus.

CANopen® Industrial Automation protocol stack

The CANopen protocol stack integrates with eCosCentric's *eCosPro-CAN* driver layer to deliver CiA 301 standard conformant functionality. Its comprehensive library supports the development of fully-featured CANopen master or slave devices, including NMT master (Network Management), LSS master (Layer Setting Services) and SDO clients. Add-on packages further extend the functionality including CANopen manager extensions, safety protocol and SDO gateways.

CEE-J® embedded Java virtual machine

CEE-J high performance, compact and proven clean room virtual machines are running industry standard and custom Java applications. Applications written to the J2SE, MHP and OSGi™ specifications can be rapidly deployed to deliver interactive content in a proven and mature environment. These systems are at the forefront of the drive to create IoT and M2M solutions.

eXtremeDB™ embedded in-memory database

eXtremeDB is a small footprint, in-memory database system (IMDS) designed explicitly for real-time systems. Applications include set-top boxes, telecom equipment, consumer electronics and other connected devices. The eXtremeDB real-time database minimizes RAM and CPU demands and offers unmatched performance, reliability and development flexibility. It delivers a high level data definition language, concurrent access, transactions, SQL and flexible indexing. It also includes features that are rarely available in compact database engines, such as event notifications and object history.

OS Changer® application migration system

OS Changer is a C/C++ source-level virtualization technology that allows you to easily re-use software developed for VxWorks®, pSOS®, Windows®, Nucleus® and ThreadX® on eCosPro. It eliminates manual porting effort, saves money and shortens time to market. The appropriate OS Changer interface connects to your application developed for your previous OS while the OS Abstractor® target specific module provides a translation to the eCosPro run-time.

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