

TechDhaba Embedded Systems Division

Module 1 – Zephyr RTOS Architecture Overview

Overview

Zephyr RTOS is a modular, scalable real-time operating system supporting ARM, RISC-V, and x86 architectures. It uses a hybrid microkernel design.

Key Components

1. Kernel and Scheduler 2. Device Driver Framework 3. Logging and Tracing 4. Configuration System (Kconfig) 5. Build System (CMake + Ninja)

Advantages

Open-source, highly portable, security focused, and ideal for IoT and embedded applications.