

# Micro-modularization of embedded systems



## Overview

These modules, or micro modules, are designed to perform a specific, well-defined function and interact with other modules through clearly defined interfaces. In many products, this model is still appropriate. Problems arise when a device stops being a “closed project” and instead remains in. We present a collection of tools for building plug-and-play modular physical computing systems that we call Modular-Things. Microservices modules in microservices architecture for IoT apps communicate with each other via lightweight protocols (such as. Abstract- This paper explores the strategic implementation of microservices architecture as a transformative approach to achieving modularity and scalability in enterprise systems. In this talk at the Embedded Open Source Summit 2024, Goliath Firmware Lead Sam Friedman talks about how to create “microservices” for microcontrollers. After Microservices became popular, people realized that the structure of a system is very important. The basic concept of modularization is not new, however.

## Article Content

### Microservices Architecture for Embedded Systems Guide

Microservices modules in microservices architecture for IoT apps communicate with each other via lightweight protocols (such as HTTP, MQTT, or other IPC mechanisms) and can use ...

### From Monoliths to Modularization: Microservices, Design System ...

Armed with a proven design system, a budding MFE strategy, a larger set of microservices, and a newfound confidence from BNPL's success, we set our sights on the real beast: ...

### Microservices in Embedded Systems: Migrating from Monolithic ...

Why does monolithic firmware stop scaling in long-lived embedded systems, and when does it begin to generate systemic risk? We explain how to transition to a modular architecture without a costly "big ...

### Microservices for Microcontrollers: Composable Software ...

Embedded systems, like any software system, benefits from modularizing software components, especially as they approach production. In this talk at the Embedded Open Source ...

### Modular-Things: Plug-and-Play with Virtualized Hardware

In this paper we present our approach to improved prototyping of cyber-physical systems with virtualized modules, Modular-Things.

### Developing Microservices Architecture Models for Modularization ...

This paper seeks to explore how microservices architecture models can be developed and deployed effectively to achieve modularization and scalability in enterprise systems.

### System Miniaturization and Modularization

Innovative tooling and system solutions for microassembly, constructed as adaptable modules with varying degrees of miniaturization.

### Modularization: The Foundation of Microservices and Monoliths

Dividing a huge system into modules is the only way to develop large systems. After Microservices became popular, people realized that the structure of a system is very important. Some took these ...

### Modular Design Implementation in the Firmware of Complex Micro ...

In embedded systems, firmware serves an indispensable purpose. It enables system configuration and security, as well as performance optimization and system main.

## Micro Modularization: A Deep Dive

This essay will explore the core principles, benefits, challenges, and practical applications of micro modularization, providing a detailed understanding of its role in modern software engineering.

## Contact Us

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