



## CycloneACME

**CycloneACME** is a client implementation of ACME (Automatic Certificate Management Environment) dedicated to embedded applications. This solution can be used to automate the process of managing X.509 certificates (ordering, renewal, revocation) with a remote certification authority like Let's Encrypt. ACME allows deployment of public-key infrastructure on Internet-facing devices (HTTPS server for example) at very low cost.

### Main Features

- ACME v2 protocol implementation
- Client mode of operation
- ACME account management (creation, update, deactivation and key rollover)
- Certificate management (ordering, renewal and revocation)
- Supports RSA, ECDSA and EdDSA certificates
- Supports standard ACME challenges (HTTP, DNS and TLS-ALPN)
- ACME-DNS client provides a simple way to automate ACME DNS challenges
- Compatible with ACME servers such as Let's Encrypt, Encryption Everywhere or Buypass Go SSL
- Comprehensive user API
- Flexible memory footprint. Built-time configuration to embed only the necessary features
- Portable architecture (no processor dependencies)
- The library is distributed as a full ANSI C and highly maintainable source code

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- [RFC 8555](#): Automatic Certificate Management Environment (ACME)
  - [RFC 8737](#): ACME TLS Application-Layer Protocol Negotiation (ALPN) Challenge Extension
  - [RFC 7515](#): JSON Web Signature (JWS)
  - [RFC 7517](#): JSON Web Key (JWK)
  - [RFC 7518](#): JSON Web Algorithms (JWA)
  - [RFC 7638](#): JSON Web Key (JWK) Thumbprint

### Supported Processors

- ARM7TDMI / ARM926EJ-S
- ARM Cortex-M3
- ARM Cortex-M4
- ARM Cortex-M7
- ARM Cortex-R4
- ARM Cortex-A5
- ARM Cortex-A8
- ARM Cortex-A9
- RISC-V
- MIPS M4K
- MIPS microAptiv
- PowerPC e200
- Coldfire V2
- RX600
- AVR32
- Xtensa LX6

### Supported Compilers / Toolchains

- GNU GCC / Makefile
- Atollic TrueSTUDIO
- IAR Embedded Workbench
- Keil MDK-ARM
- Microsoft Visual Studio
- Segger Embedded Studio
- AC6 System Workbench for STM32 (SW4STM32)
- Atmel Studio
- Infineon DAVE
- Microchip MPLAB X
- NXP MCUXpresso
- Renesas e2Studio
- ST STM32CubeIDE
- TI Code Composer Studio (CSS)

### Supported Operating Systems

- Amazon FreeRTOS
- ChibiOS/RT
- CMSIS-RTOS
- CMSIS-RTOS2 (RTX v5 and FreeRTOS)
- Keil RTX
- Micrium  $\mu$ C/OS-II
- Micrium  $\mu$ C/OS-III
- Segger embOS
- SYS/BIOS (TI-RTOS)
- Bare Metal programming (without RTOS)