SDKPac™ uLoadXL™ SDK

**Cypherbridge®**
Trusted, safe and secure

SDKPac uLoadXL SDK is a secure boot loader and software lifecycle solution for embedded platforms.

Overview

uLoadXL secure boots the IoT device and processes signed and encrypted software images. Managed software images are signed using user generated key material. Secure images can be safely transferred by email, flash drive, serial port or Over-the-Air OTA over LAN or WAN network. uLoadXL decrypts and authenticates the system image and saves it to the target program flash. An incorrect signature or a malware image is blocked from install or execute.

uLoadXL is delivered pre-built and tested on a off-the-shelf target development kit, with included toolchain project files. Optional design services provide integration with a customer product with tailored feature set and loader workflow.

The uLoadXL device SDK works in tandem with the Cypherbridge WSLAM Windows Software Management Station. WSLAM can be operated by system security engineer and is available with a command line interface for CI/CD and manufacturing workflow teams.
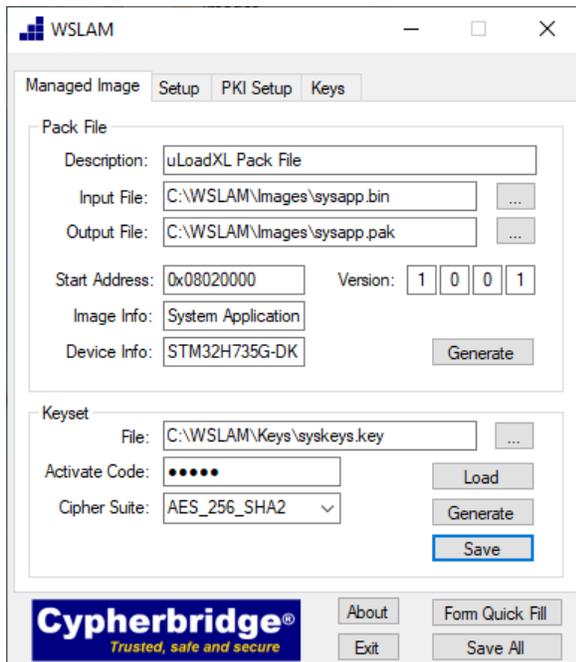

Features

- Secure root of trust at system reset or boot chain
- Safe install genuine signed and verified encrypted software images
- A/B image manager, factory image, with paired graphic or FPGA bit files
- Registry maintains signature history and detects corrupt image or malware injection
- System integrity, safety and availability features include primary and backup registry, A/B images, power fail recovery, and failsafe boot options
- Bootstrap activation and recovery
- Application control channel interface for image activation, and status reporting, image inventory
- Flexible installation path using removable media, serial port, CAN bus, LAN/WAN transfer
- Advanced proxy install chain for multiple processor nodes or cores
- Use standard toolchain to compile and link software images
- WSLAM UI and command line generates secure and authenticated managed image
- Customizable for OEM product requirements
- Platform cryptographic engine interface options
- uLoadXLQ™ Post Quantum Ready digital signature option

OTA Over-the-Air Update

The Cypherbridge CDX™ SaaS and SDKPac™ CDX device client SDK provides scalable software update and fleet management options.
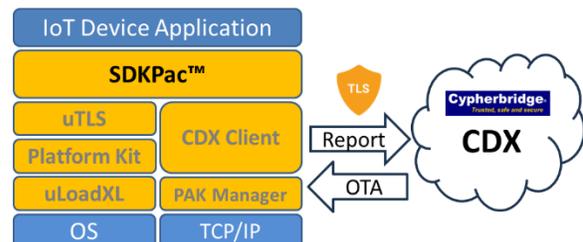
CDX together with uLoadXL helps scale and automate the software lifecycle, for regulatory requirements including the EU Cyber Resilience Act which mandates software vulnerability monitoring, reporting, and OTA update for security patches, along with X509 certificate expiration and renewal.