Securing GSM/GPRS Modem Modules with CyaSSL

Communication Consultants was founded in 1995 by a team of highly experienced engineers in mobile communications. This experience, including the design of the first commercially available mobile handset for industry-leading companies and expertise in Layer 1 design, played a fundamental role in the success of Communication Consultants. In 2000, Communication Consultants Worldwide (CCww) was formed in recognition of the global nature of the company's activity.

CCww provides GSM, GPRS, and EDGE protocol software as well as M2M (Machine-to-Machine) modem modules with a goal of maximizing customers' value through the provision of leading-edge cost-effective GSM platforms, reference designs, software toolkits, and ready-to-use modules. CCww's primary GSM/GPRS modules, the STAR-Let 200 Series, provide customers with compact, fully programmable GSM/GPRS modules. The STAR-Let's small size, low power consumption, and flexibility make it the ideal choice for numerous M2M applications including automotive, security, health, and vehicle management/tracking applications.

Key Requirements

CCww's STAR-Let series appeals to customers in many ways - one of which is its small size and low resource usage. As CCww searched for an SSL/TLS library to secure the STAR-Let M2M module series, there were several key requirements driving and guiding the search. One of the first requirements necessitated that the chosen SSL library needed to have a compact binary code size. The library would need to be able to run in conjunction with the GPRS protocol stack on an ARM9 without taking up too much processing time from the CPU. The STAR-Let has a total of 4MB ROM available and 1MB RAM available. The library also needed to be designed for embedded environments and able to be easily integrated into STAR-Let's existing RTOS and TCP/IP stack.

Solution

As CCww began searching for an SSL solution, they found that the CyaSSL embedded SSL library fit their requirements very well. Having been designed from the ground up for embedded systems and memory-constrained RTOS devices, CyaSSL provided a small footprint and low memory usage, high portability, and the ability to be easily integrated into an existing system.

With a standard footprint size of 30-100 KB and runtime memory usage of 3-36 KB, CyaSSL was able to easily fit into the STAR-Let's available resources with room left over for other enhancements and user applications.

"The support provided was first class. When I needed some extra information, I emailed the yaSSL guys and I received very prompt responses."

- Richard Carter (CCww)

Although CyaSSL offered a small and compact binary code size, it still provided a full feature set with TLS 1.2, full client and server support, current cipher support, and was accompanied by excellent technical support direct from yaSSL. As Richard Carter from CCww stated, "the support provided was first class. When I needed some extra information, I emailed the yaSSL guys and I received very prompt responses." The yaSSL developer forum also provided very useful information about the integration of CyaSSL into different embedded systems.

The fact that CyaSSL is written in the C language enabled it to be easily integrated into STAR-Let's existing software with minimal effort required. The documentation was helpful and detailed, encompassing both a user manual and API reference. After integration, CCww was very impressed with the efficiency of the library - proving that CyaSSL was not only a resource-friendly solution but also a high-performance and low-power solution as well.

The fact that CCww could easily obtain source code was key in the decision to choose CyaSSL. Having the source code always available allowed CCww to easily integrate and maintain the software under their standard config management procedures. The availability of a product-line license allowed CCww to reuse the integrated CyaSSL stack across their range of tracker products without the need to come back to yaSSL and go through license discussions again – saving time and speeding up the development cycle of future products.

Results

In choosing and integrating the CyaSSL embedded SSL library into the STAR-Let M2M series, CCww was able to easily and cost-effectively secure communication between STAR-Let modules and AGPS servers communicating through the SUPL protocol with SSL/TLS. CCww's STAR-Let modules with CyaSSL are deployed in numerous M2M applications throughout Europe, South Africa, China, and the UK.

For More Information

www.yassl.com   info@yassl.com
www.ccww.co.uk   sales@ccww.co.uk

Solution Provided by: