CyaSSL enables Cinterion to easily secure cellular Machine-to-Machine communication

Cinterion, a Gemalto company, is headquartered in Berlin, Germany and was founded in 1995. Since its foundation, it has become the worldwide leading supplier of industrial cellular machine-to-machine (M2M) communication modules. These modules allow machines, equipment, vehicles and other assets to securely communicate over wireless networks.

Cinterion's modules are based on the GSM and UMTS technology standards. These technologies allow unlimited global mobility and extensive worldwide coverage with seamless interwoven roaming coverage. In tight collaboration with Gemalto, the world leader in digital security, the company also provides a diversified offering of digital security related solutions – from end-to-end security consulting and secure hardware elements to dedicated machine identification modules (MIMs) for cellular M2M applications. Depending on the level of security needed, customers have the choice to use and combine different features and services provided by cellular modules and the MIM. The combination of Cinterion M2M modules and Gemalto MIMs brings a new breed of heightened trust and security to M2M solutions.

Key Requirements

Cinterion's M2M modules are used in a wide array of products ranging from vending machines to electric meters to global tracking systems. As such, the ability to perform secure HTTPS connections from the module is paramount. When searching for an SSL library to enable these modules to perform HTTPS, several key requirements Cinterion was looking for included low memory usage, both 16 and 32-bit compatibility, TLS standards support, and the ability for the SSL library to be used with non-blocking network interfaces. The availability of the library in open source was also a highly desired characteristic. An open source SSL library would allow Cinterion to easily create prototypes to verify that the library would work as expected with their products before a commercial license would need to be purchased.

Solution

As many embedded device developers know, memory constraints pose a substantial challenge when adding new features and libraries to a device. The CyaSSL embedded SSL library, with its 30-100kB disk footprint and 3-36kB runtime RAM usage, was easily added to Cinterion's M2M modules. CyaSSL offered both 16 and 32-bit support out of the box, allowing it to run on a variety of platforms.

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When searching for an SSL library, Cinterion noted CyaSSL's current TLS standards support as an indication of both a high commitment to security and also an ongoing commitment to keeping the library up-to-date. With millions of M2M modules being secured with CyaSSL, Cinterion can feel secure knowing that CyaSSL will stay up to date and current regarding any security fixes that may arise in the future. Having looked at a minimum of three SSL implementations, Cinterion had experienced problems with other implementations non-blocking interface functions. Seeing that CyaSSL had no problems in this area was comforting and reassuring.

Because of the open source nature of CyaSSL, Cinterion was able to directly download a GPLv2-licensed copy from yaSSL's website and begin prototyping and testing. This eliminated the need to go through any pre-sales or license agreements up front. After the prototype had been tested, Cinterion was able to easily and seamlessly move to a commercial license. CyaSSL's code base being identical for both the GPLv2 and commercial versions meant that the majority of the implementation work had already been done during the prototyping stages, allowing the M2M modules to move to market more rapidly.

Results

Cinterion was able to reduce development time and costs by using the CyaSSL embedded SSL library to secure communications between M2M modules. With a small footprint, high portability, current standards support, a robust code base, and a friendly open-source license model, CyaSSL was the perfect fit for Cinterion's requirements. As a result, the CyaSSL embedded SSL library is now used to provide secure HTTPS connections in several product lines from Cinterion.

For More Information

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