

UL SM-DP+ Simulator

Overview

UL SM-DP+ Simulator provides an essential tool for anyone who wants to load eSIM profiles onto Consumer eSIM devices when they do not have a real SM-DP+ readily available.

Benefits

UL SM-DP+ Simulator loads eSIM profiles onto Consumer eSIM devices to verify that the device, its LPA and the eUICC are interoperable with the eSIM profile. It can help you determine the root cause for potential issues.

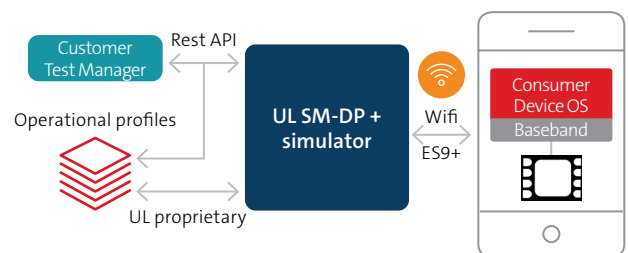
Features

UL SM-DP+ Simulator supports the functions on GSMA ES8+ and ES9+ interfaces. It does not currently support ES2 functionality, but it may in the future.

REST API – Used for test automation control by a customer test manager and provides the ability to configure the SM-DP+ simulator to load profiles and associated metadata with custom SM-DP+ certificates and keys or with GSMA SGP.26 test certificates and keys used in SGP.23. Alternatively, you can use our proprietary mechanism to load profiles via the UI.

Templating Engine – Provides a profile template as input to generate profiles, including the metadata, containing specific values particular to each profile subscription, e.g., EF_ICCID, EF_IMSI, EF_MSISDN, K-Key and OPC.

DNS server – Create your own test network connecting the test tool and the device to a Wi-Fi router mapping Activation Code FQDNs from the device's LPA to the UL SM-DP+ Simulator's IP address.



Key benefits

- Eliminates the need to book test time on your real SM-DP+ platform.
- Load profiles onto the eSIM in the device via Wi-Fi on GSMA ES9+.
- Provides REST API to help automate and integrate with your own test environment.
- Use UL's proprietary mechanism or REST API to load profiles into the SM-DP+ and schedule profile availability for testing, including retry attempts.
- Support for key subscription identifier inputs in profile templates to generate individual new profiles.
- Quickly verify and evaluate interoperability between profiles, handsets and eSIMs.
- Provides detailed logs for ES9+ (including TLS) and ES8+ for profile download.
- Supports eSIM profile download via Activation Code and Default DP+ Address with or without Confirmation Code.
- Download several profiles concurrently on different devices.

Specifications

REST API for simulator management

- Start and stop the simulator
- Check whether the simulator is running
- List, add and remove profiles
- Reset the profile download counter

Proprietary profile loading mechanism

Manually download and install profiles using UL's proprietary mechanism.

GSMA interfaces

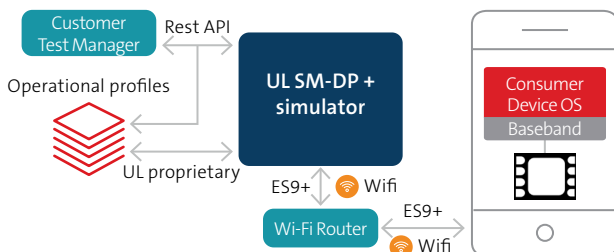
- GSMA's ES8+ interface to download the profile between the SM-DP+ simulator and the eUICC in the device
- GSMA's ES9+ interface to download the profile between the SM-DP+ simulator and the device LPA via Wi-Fi
- Does not currently support ES2+ functionality, but may in the future
- Logging of all TLS and RSP layer traffic on ES8+ and ES9+

Secure channel support

- Support for TLS and Protocol for Profile Protection (PfPP) via GSMA's ES9+ interface
- Support for GSMA's SCP03t via GSMA's ES8+ interface

DNS server

Specify a custom domain name (FQDN) to IP address mappings



UL SM-DP+ Simulator Test Environment

Procedures

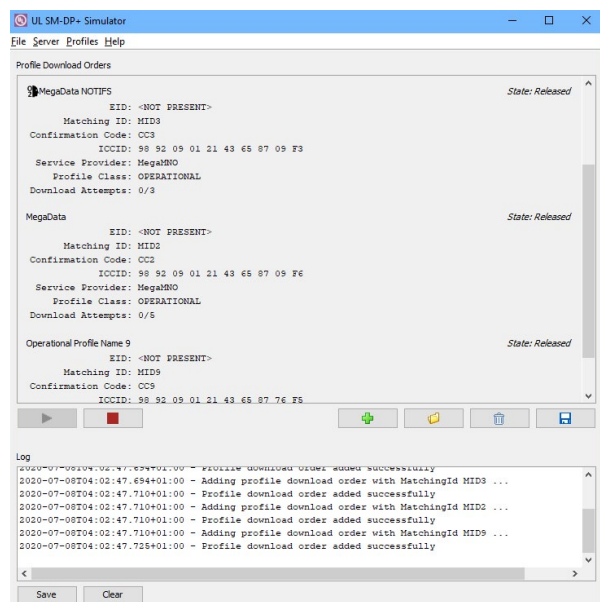
- Profile Download initiation (equivalent behavior)
- Common Mutual Authentication
- Profile Download and Installation
- Notifications

Profile templating engine

- Command line tool
- Input profile(s) as DER format
- Specify output file as DER or debug text
- Support for Trusted Connectivity Alliance (TCA) file system templates and generic file management
- Support for key subscription identifier inputs in profile templates to generate individual new profiles

TCA Interoperable Profile Format

Support of TCA eUICC Profile Package: Interoperability Functional Requirements specification



Hardware

UL does not provide any hardware as customers only need their own Wi-Fi router and the tool to perform testing.

For more information visit UL.com/sds



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