

STB Software Update

Application Note

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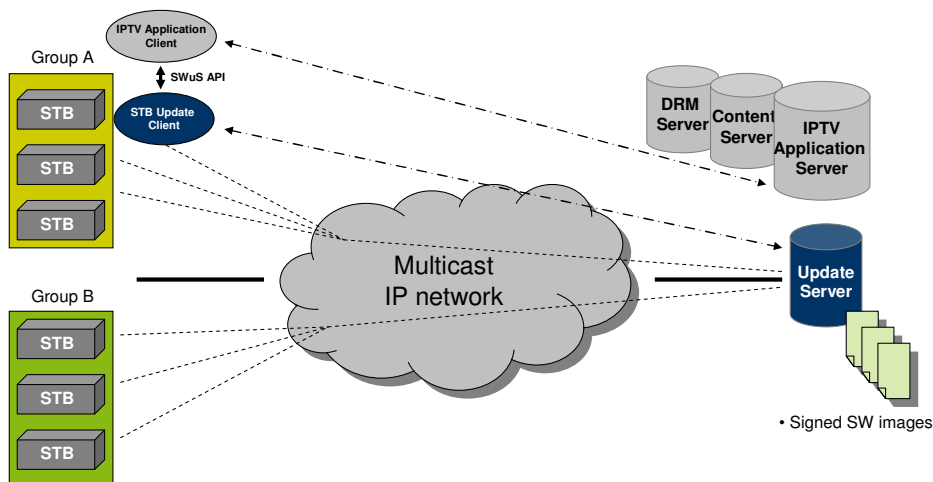
Overview

For the operation of an IPTV network it is essential to have a software update concept to introduce new software features or error corrections. Albis Technologies offers an Update Server as a complement to the Set Top Box if the end to end solution does not cover this functionality.

The Software Update Framework consists of

- A Software Distribution Server
- A Set Top Box Client including an API towards the IPTV application

as depicted below.



The Software Update Framework provides the following main features

- Based on an open Linux platform
- Secure distribution of signed SW images via multicast
- Bandwidth control for multicast channels
- Highly scalable solution
- Support of different STB models
- Support of different STB groups
- Forward Error Correction for robust and reliable file distribution
- STB client API for IPTV application integration
- Customizable and expandable protocol

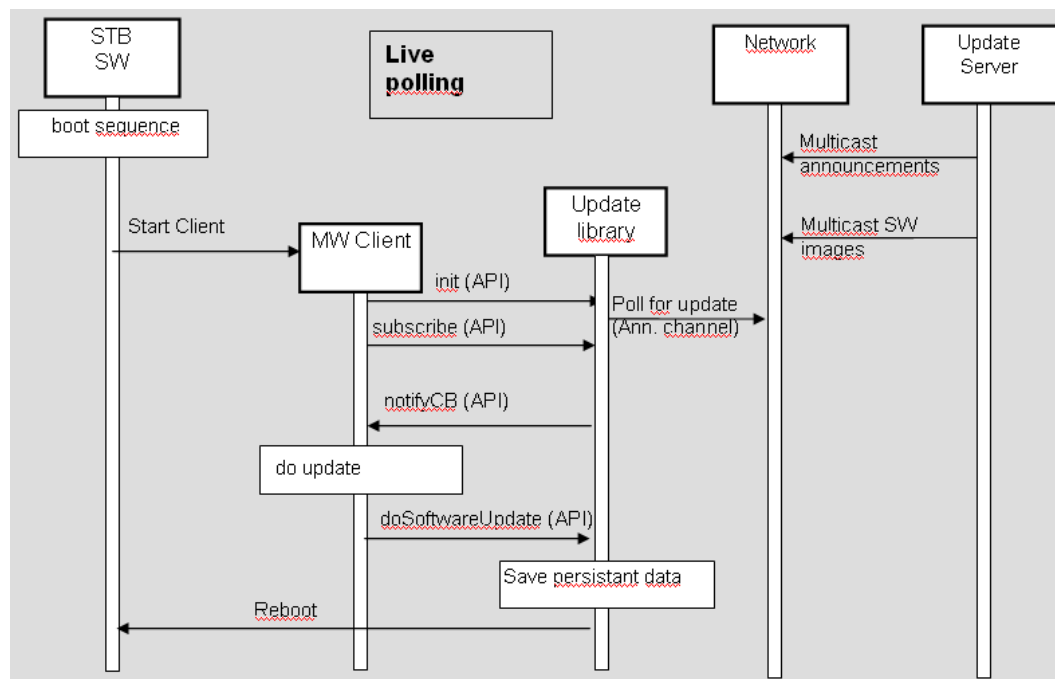
New software versions are announced on a multicast announcement channel which has to be known by the STB and is typically learned at boot time via DHCP. Once the STB has joined the announcement channel it can check for available new software versions and join the distribution channel of the new software image for download and installation.

Scenarios

An important question is, when a software update is triggered on the STB. The Albis Technologies Update Framework can be used in different scenarios meaning different levels of integration into the middleware solution depending on the middleware's capabilities.

In the simplest scenario, the Albis Technologies Update Framework works totally independent from overlying IPTV systems. The only secure trigger point for a software update in this case is at boot time of the STB since no user activity can be interrupted. The STB will check for a new software on the announcement channel and if a new version is announced download and install the software image. The user will be informed with messages on the TV screen while the process is accomplished.

STB reboots only occur randomly when the user has switched off the STB and powers it on again. To improve control about software updates, the middleware can take control by triggering software updates via an API. This gives more flexibility and ensures roll out of new software to all affected groups of STBs independently from user actions. In this case, the application can initiate the software update procedure and use its management capabilities to control the process. The picture below depicts the principle process in this scenario.



Software Updates can be targeted to groups of STBs on network level or other group IDs which might be available in the middleware database. These group IDs can be inserted in the announcements and used as criteria for updates, however, the middleware has to take care that every STB knows to which group it belongs.

Integration

As part of the STB selection process the requirements for software updates should be defined considering operational requirements and middleware capabilities. The end to end integrator should assure that a proper software update solution is part of the deployed system.

Albis Technologies can assist in finding the optimal solution together with the IPTV service operator, the integrator and the middleware vendor.