

Streaming/Entertainment Giant Extends the Device's EOL by Rearchitecting the Live Product



Client Overview

A significant player in the video streaming realm had to find more storage space for updated applications in about seven million deployed devices worldwide.

The Problem

About nine years back, when the streaming device was being designed, 2GB flash storage space was considered adequate, considering the BoM and the selling price point of the device. But the applications (YouTube, Hulu, Netflix, et al.) started requiring more storage to keep their metadata.

The hardware did not have more storage to offer to the applications, and there was no way to update the hardware of deployed devices on the field. Since it was a subscription-based product, retiring the device would result in a significant loss of existing revenue stream.

The Diagnosis

Bluehatsoft's team of engineers worked with the client designers and found out that the software architecture of the device used ping-pong method, where two images of a working software stack are kept in the device—one as an active image and the other as a fallback. This mechanism offers smooth operations in the event of failed upgrades.

Bluehatsoft apprised the client about a potential new design that could free up more than 500MB of storage space. This free space could be used for storing application information. Bluehatsoft further conducted a risk analysis and mitigation study to evaluate various potential risks associated with the deployment of the new software stack to six to seven million devices worldwide.

After careful analysis of Bluehatsoft's recommendations, the client greenlighted the project.

The Solution

Bluehatsoft re-designed the software stack to implement an asymmetric A/B update mechanism where the fallback image is not a fully functional software stack but a stripped-down software stack that is tasked solely with the update process. The update process state machine was completely rewritten and implemented in the update image, reducing the application image size as well. The asymmetric A/B update image was thoroughly tested by Bluehatsoft's test engineering team and then by the client's QA team. Later, after acceptance, it was deployed to all devices worldwide in multiple stages.

The Result

As a result of this architectural change, the client estimated that the EOL of the device was extended by about six years, resulting in the continuation of a significant revenue stream.