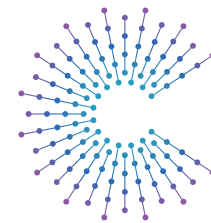


# Automotive Push Notifications With UnifiedPush

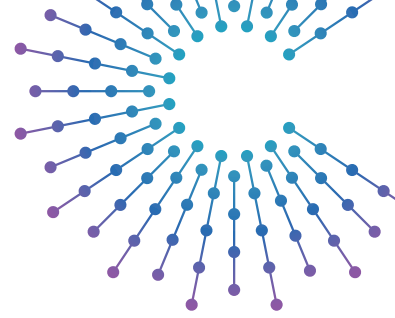
BMW  
11<sup>th</sup> September 2023



# COVESA

Accelerating the future of connected vehicles

# Automotive Push Notifications



## Goal

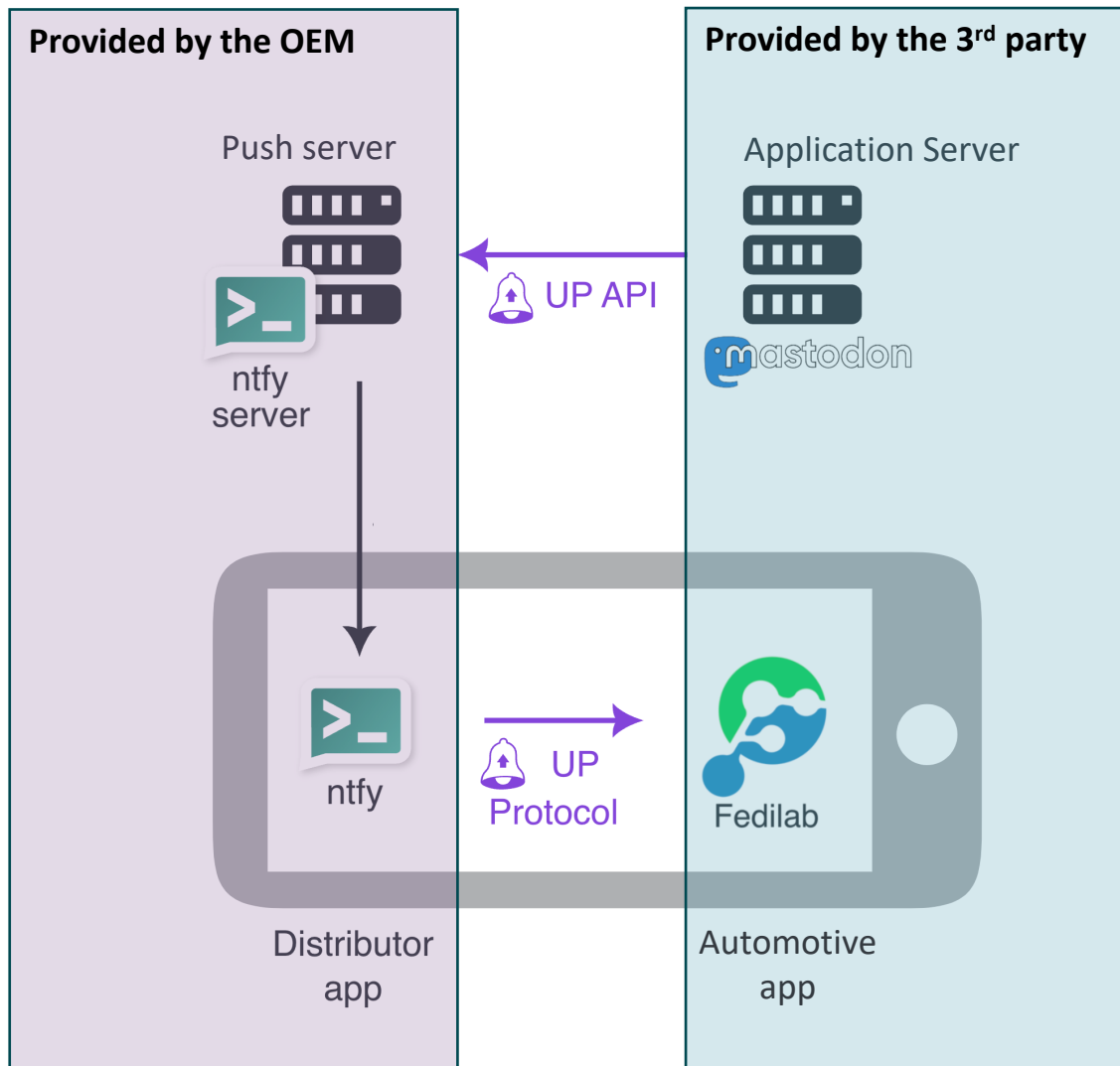
Agree on an industry standard service/protocol for 3<sup>rd</sup> party push notifications in the automotive space to enable core user experiences like

- Receiving VoIP calls (e.g., Zoom, Webex)
- Receiving messages

## A possible Solution: UnifiedPush

- COVESA members only have to agree on the specifications
  - Each OEM has full freedom to either use an existing push server/distributor combination, develop their own or collaborate within COVESA
  - Compatibility is ensured by a testing suite
- UnifiedPush is Apache-2.0 licensed, same as AOSP
- UnifiedPush is compatible with web push
  - 3<sup>rd</sup> party app backends might already support it

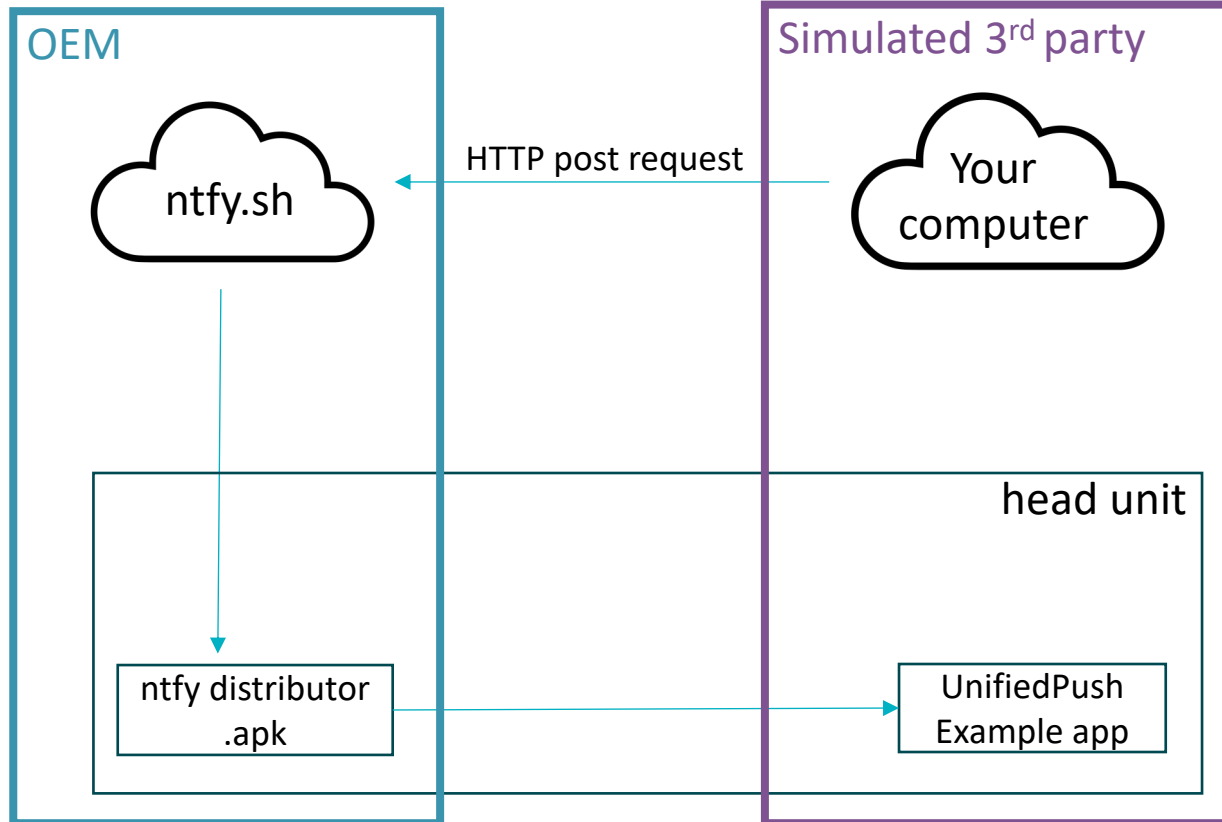
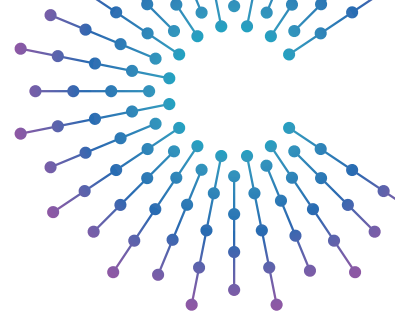
# UnifiedPush



- **Application server:** This is the server that hosts the application – the 3<sup>rd</sup> party backend
- **Automotive application:** The (3<sup>rd</sup> party) application receiving the push notifications. The application gets started by the distributor on incoming push notifications if it is not running
- **Push server:** This is the server that listens for incoming push messages and forwards them to the connected Push Distributor running in the car
- **Distributor:** This is the application that forwards push messages to the registered end user application. It is the application which is connected to the Push Server and must be running at all times
- **UP API & UP Protocol:** The only thing COVESA needs to standardize

# POC 1

## Existing solution for OEM part / simulate 3<sup>rd</sup> party application



1. Use [ntfy.sh](https://f-droid.org/de/packages/io.heckel.ntfy/) as the push server and distributor
  - Easily installable on the head unit as an .apk<sup>1</sup>
  - Provides a free push server we can use for the POC
2. Use the [UnifiedPush example app](https://f-droid.org/packages/org.unifiedpush.example/) to simulate a 3<sup>rd</sup> party application receiving push notifications
  - Easily installable on the head unit as an .apk<sup>2</sup>
3. Make an HTTP post request to the URL displayed in the UnifiedPush example app simulating the 3<sup>rd</sup> party backend

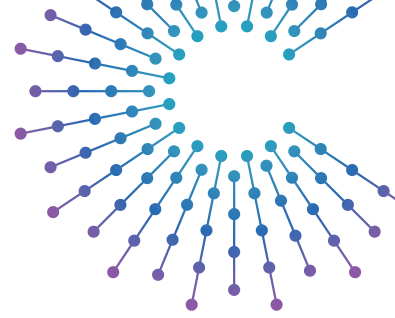
→ Get to know UnifiedPush

Time requirements: <1 hour

<sup>1</sup> <https://f-droid.org/de/packages/io.heckel.ntfy/>

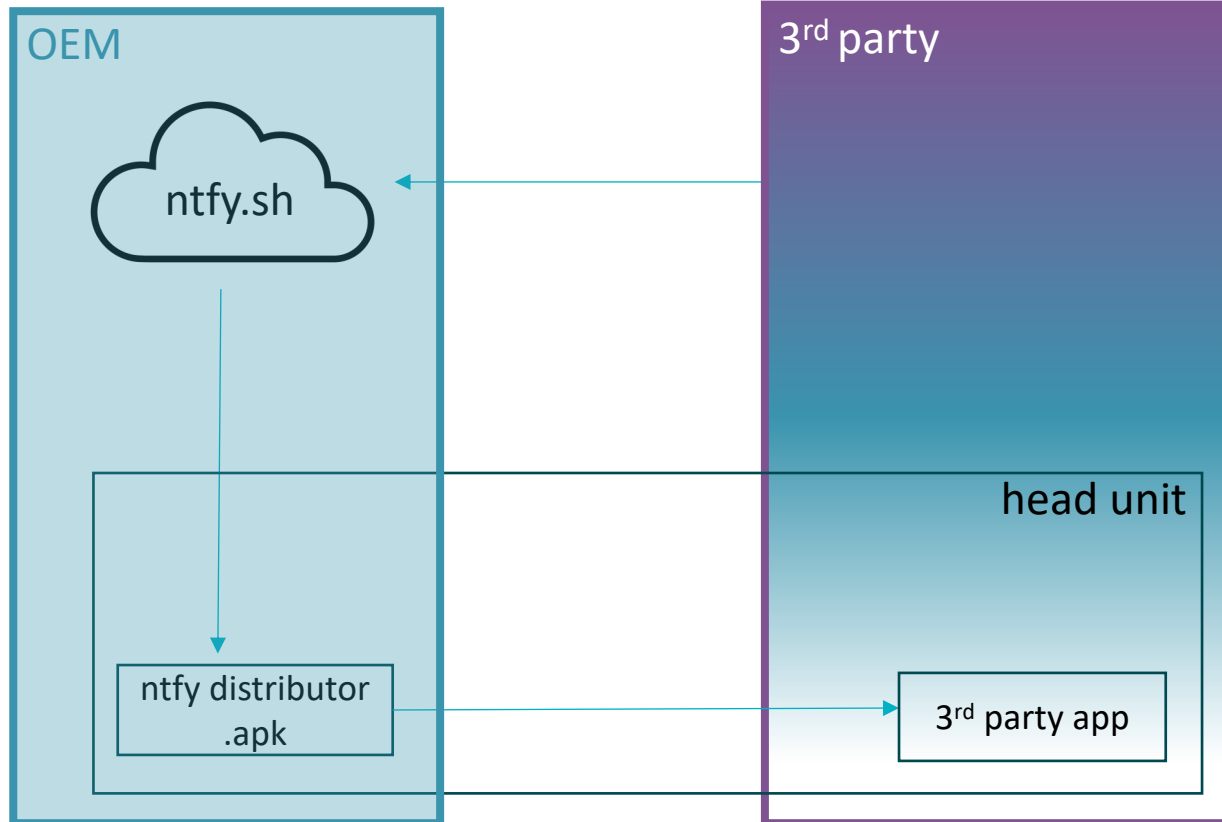
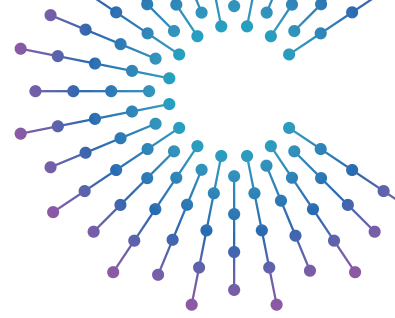
<sup>2</sup> <https://f-droid.org/packages/org.unifiedpush.example/>

# POC 1 Walkthrough



# POC 2

## Existing solution for OEM part / 3<sup>rd</sup> party application POC



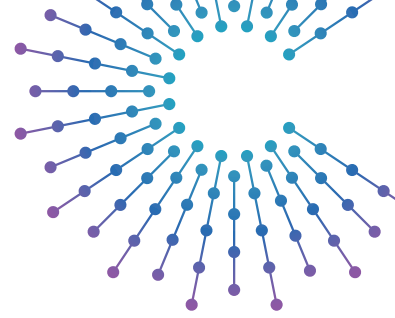
1. Use [ntfy.sh](https://f-droid.org/de/packages/io.heckel.ntfy/) as the push server and distributor
    - Easily installable on the head unit as an .apk<sup>1</sup>
    - Provides a free push server we can use for the POC
  2. Install the 3<sup>rd</sup> party application POC that implements UnifiedPush
- Evaluate the end-user experience

**Time requirements:** <1 hour once the 3<sup>rd</sup> party application POC is available

<sup>1</sup> <https://f-droid.org/de/packages/io.heckel.ntfy/>

# 3<sup>rd</sup> Party application POC

Add UnifiedPush support to your app



Simulate OEM part using any Android device by installing e.g., [ntfy.sh](#)<sup>1</sup>

UnifiedPush API

3<sup>rd</sup> party



Android device

UnifiedPush Protocol

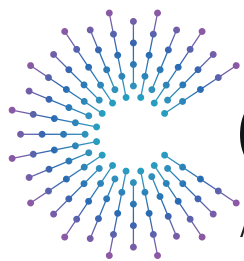
Your app

1. Evaluate whether your backend already supports [web push](#)
  - Yes: probably works out of the box 🎉
  - No: add support for UnifiedPush/web push
2. Integrate the [UnifiedPush connector library](#) into your app or implement the UnifiedPush protocol yourself
3. Easily simulate the OEM part using any Android device with an installed UnifiedPush distributor (e.g., [ntfy.sh](#))

→ The [ntfy.sh backend](#) is open-source and might be a valuable reference implementation

→ The [UnifiedPush example app](#) is open-source and a reference implementation for the UnifiedPush connector library

Time requirements: 1-7 days



# COVESA

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## Thank you!

