NetOTA

Quick introduction to IoT centric package archive

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In a nutshell

- Meta-data service for IoT packages
    - HTTP, looking at COAP
- Suitable for system images
- Co-developed with SysOTA
- Apache 2.0, entirely open source

Design overview

- Packages are just names

- Streams for each package

- Archives within each stream
  - each archive has download URLs

Concepts: packages

Packages are just names

- Good for humans to read

- Good for branding

oniro

Concepts: streams

Streams are **named** distribution points

- Multiple-availability of versions and stability levels
  - many streams per package

- Each stream holds exactly one specific version at a time
  - Think of streams as git branches
  - Publishing changes the set of archives in a stream

- Streams can be closed
  - Closed streams can recommend replacement

Concepts: archives

Archives are descriptions of downloadable files

- **REMEMBER** all archives in a stream have the same version

- Same package, same source, different builds

- Various CPU architectures, debug options, machines (Yocto)

Archive: envelope and content

- Separate meta-data for archive (envelope) and content inside
  - example: archive: RAUC verity bundle, content: SysOTA system image
  - example: archive: tar.gz, content: source code
- Suitable for offering optimized builds under one name
  - various file systems
  - various compression options
  - device picks preferred archive from compatible subset

Concept: download offers

Each archive has a number of download offers

- URL and metric

- Lowest metric preferred

- Clients pick supported schemes

Current state (Jan 2022)

- NetOTA v0.3.1 released
  - tested and supported by SysOTA v0.1.0
  - documented on-disk repository format
  - standalone service (http) for reverse proxy or local dev

Roadmap

- Polish experience for mini-instance for local development

- Explore publishing pipeline

- Deploy Oniro OTA service and collect feedback

- Explore Zephyr images and local caching

Thank you

More resources at https://gitlab.com/zygoon/netota

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