Integrating *swift* on a low-cost CE platform

http://www.p2p-next.eu

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Objectives of Talk

• Our goals for *swift*
• Introduce NextShare\textsuperscript{TV} – Hardware capabilities – Software stack
• Present our experience integrating and testing *swift*
• Present some performance statistics and graphs
Our goals for *swift*

• **Ubiquitous platform** for scalable content delivery supporting Live & OnDemand usage

• Facilitation of a **sustainable business model** that **maxmises efficiency** of **Open Internet** resources whilst **minimising operating costs**

• **Standards** for codecs, security and metadata that **allow trusted and wide-ranging media ecosystem** to develop
How does CE change things?

• Community of **CE peers** in early stages of life
• United by a common **Open Standard**
• **Interoperability** between multiple vendors
• **Ubiquitous** (100s millions of TVs)

- Stable Overlay
- Improved Economy
- Improved QoE
- Greater Revenue
NextShare TV – the device
**Integrating swift services**

**Atom based feed-of-feeds** consisting featured content and services e.g.

tswift://swifttracker.lancs.ac.uk:7777/21b8fef28ba88c9db97063da8fc0302ed2bba1d9$8192@2485
PDD’s system testing & QA framework

- 16 x STB + virtualised NextShare\textsuperscript{PC} peers + ingest peer
- In-depth packet capture and analysis / Real-time analysis
CPU Usage (%)

Runtime requirements:
- CPU usage: 100% at around 10Mbps total throughput
- 16-20 Mbps without hash-checking
- Memory usage: 1.5GiB file uses 7MiB (size of MHT)
- Based on chunk size, also file size
- Connection limits: 20 connections
- Arno for exact calculation...
swift vs BT on NextShareTV
NextShareTV Memory Map

- Application Heap: 110MiB
- BPA – 16MiB (720p OSD FB)
- Python – 3MiB
- NextShareTV App: 40MiB
- STSDK Drivers: 20MiB
- Linux Kernel – 3MiB
- STSDK Workspace: 48MiB
- AV Codecs & Crypto: 16MiB
- Currently Unused: 128MiB
- STSDK Workspace: 64MiB
- Video Memory: 8 x Full HD Frame Buffers (1920 x 1080) 64MiB

Free
Linux Workspace
Heap
Codespace
Kernel and Drivers

swift memory utilisation

Footprint
Code space 1MiB 3KiB data
Separate process 78KiB bss
Thanks for listening

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