

# Google Fuchsia OS



# What Is Fuchsia

- A relatively new OS under heavy development by Google (and Samsung?)
- Open-source



# Big Points

- Architectural Principles
  - Simple
  - Secure
  - Updatable (or modular)
  - Performant

# Zircon

## A Light-Weight Kernel

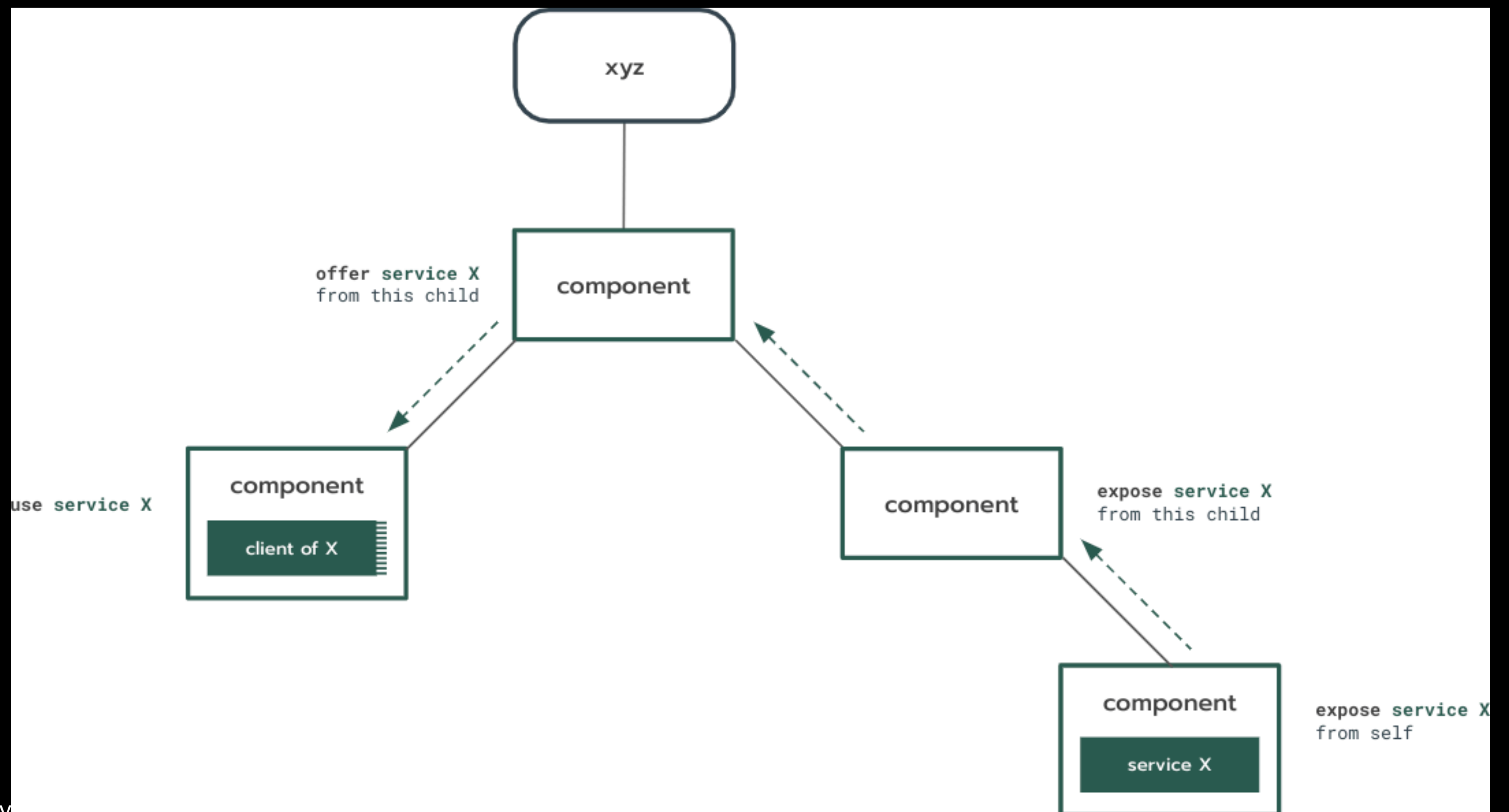
- The light-weight foundation for Fuchsia
- Relevant information to what we have been doing in class
  - Syscall use during development
  - Fair Scheduling
- Handles & Kernel Objects

# Components

- Almost everything is a component, including:

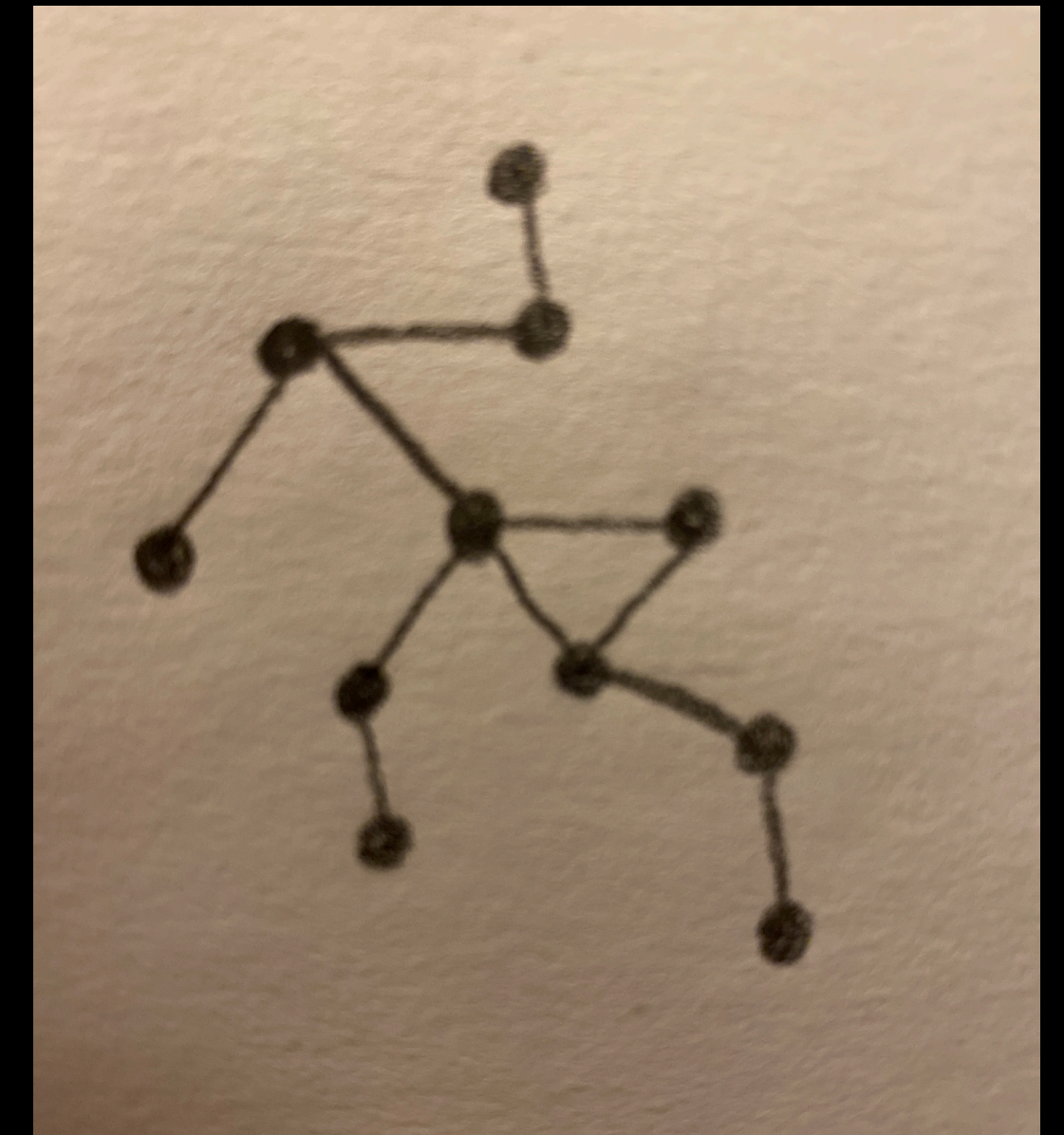
- Filesystems
- User Applications

- Component Manager



# Namespaces and Filesystems

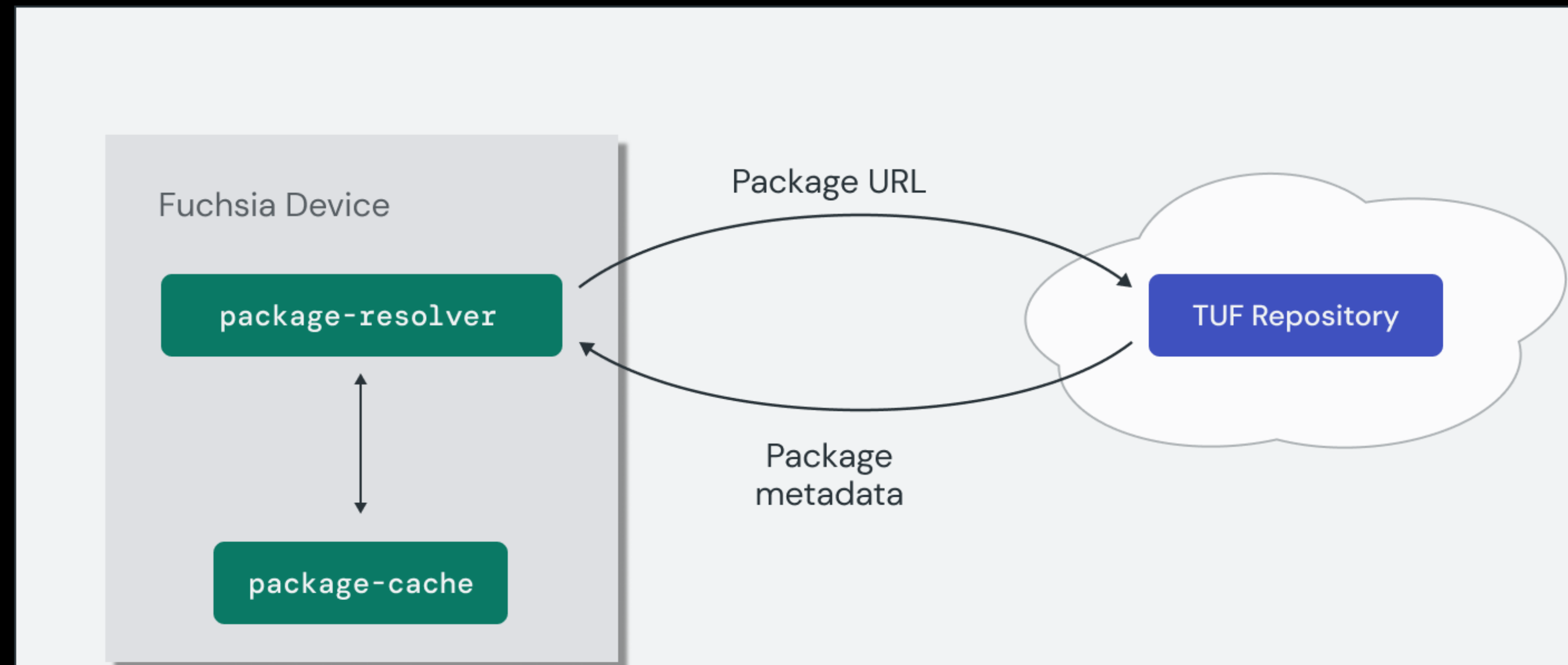
- No global/root file system, everything is *not* a file
  - ‘/’ refers to the root of the private namespace, not a global root location
  - You can only access ‘files’ that you have been given explicit knowledge about via your namespace





# Software Delivery

- Delivered via packages and on demand
- Packages are trees of Binary Large Objects (BLOBs)
  - root is meta.far which contains the metadata



# Real World Applications

- IoT devices
- Replaced Google Nest Hub's operating system via remote deployment over night.
  - Despite having a completely new operating system, it isn't easy to notice



# Code Available

- [https://cs.opensource.google/fuchsia/fuchsia/+main:src/storage/fshost/main.cc](https://cs.opensource.google/fuchsia/fuchsia/+/main:src/storage/fshost/main.cc)

# References

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- <https://www.youtube.com/watch?v=gIT1ISCioDY>
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- <https://9to5google.com/2018/03/16/fuchsia-friday-the-four-layers-of-fuchsia/>
- <https://fuchsia.dev>
- <https://cs.opensource.google/fuchsia/fuchsia/+/main:src/storage/fshost/main.cc>
- [https://www.reddit.com/r/Fuchsia/comments/bn4obl/a\\_question\\_about\\_zircon\\_and\\_its\\_capabilities/](https://www.reddit.com/r/Fuchsia/comments/bn4obl/a_question_about_zircon_and_its_capabilities/)

# Questions

