DPDK-in-a-Box

David Hunt - Intel
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Agenda

- Who am I?
- What Is DPDK-in-a-Box?
- What’s it for?
- What’s in it?
- How do I run it?
- What does it cost?
- What’s next?
Who Am I

Member of the DPDK family...

Also a “Maker”...

- PiPhone inventor – DIY cellphone
- Motorized Timelapse Rail System
- Still inventing...

Main hobby is embedded systems
What is “DPDK-in-a-Box”?

- Small form factor Linux Box
  - Maker world intersecting with the DPDK world

- Components
  - Single Board Computer (Minnowboard Turbot)
    - Intel® Atom™ Processor E3826 (1M Cache, 1.46 GHz)
  - Silverjaw Lure Daughterboard
    - miniPCI slot
  - Intel® Ethernet Controller I350 (Dual Gigabit)
    - Insert into miniPCI slot
What is “DPDK-in-a-Box” for?

- **Training**
  - Offers realistic, hands-on experience
  - Packets transfer between students

- **Academic Research**
  - Lower cost solution for wider distribution
  - Easier to research DPDK use cases

- **Exhibitions**
  - Self contained, portable system
  - Independent of network infrastructure
Minnowboard Turbot based

- Low-cost single board computer running Ubuntu Desktop
- Can be used standalone with monitor, keyboard & mouse
Laser-cut acrylic case

- Including etched DPDK logo
- Design with captive nuts & slots for easy assembly
- Open source design, users can download and cut themselves
Getting Started

- Insert SD card
- Connect keyboard and mouse
- Power on
- Run your first DPDK program

(More information regarding DPDK on dpdk.org)
“Known” System for training

- Standard Operating System Installation
  - Predictable Network Interface Setup
  - Predictable resource availability
  - Scope of what can go wrong is limited
  - Apps run in standard way with known flags
- Student physically sets up system
  - More tactile experience
Most parts are off the shelf, with some work needed on case.

Approximate costs:

- $130 - Minnowboard Turbot (ADI / Netgate)
- $50 – Silverjaw Lure with mini-PCI & M.2 slots (TinCanTools)
- $80 – i350 mini-PCI dual port NIC (Jetway).
- $30 Power Supply + case + SD Card (approx)

Total: <$300 per unit
Minnowboard Turbot Dual-E  (coming Q3 2016)

- Includes 2 Gigabit ports on board
- No need for Silverjaw Lure
- No need for i350 miniPCI board
- Reduced box size
Further DPDK Information

- DPDK Website: [http://dpdk.org/](http://dpdk.org/)
- Documentation: [http://dpdk.org/doc](http://dpdk.org/doc)
- Mailing Lists: [http://dpdk.org/ml](http://dpdk.org/ml)
  The most commonly used are “dev” for development discussions and patches, and “users” for usage discussions.
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Questions?

David Hunt
david.hunt@intel.com