



Edge computing and OPI

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Edge Overview

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And remind me: what is edge, exactly?

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ASICs on the edge

- We know precisely what we need to do
- We design a chip that does precisely this
 - ... which is not, generally, fast or cheap
- We hope we don't have any bright ideas

NFV and the edge

- We can do whatever we want
- We do it with custom code, not custom circuits
- We can even develop new ideas quite fast

...but we can't do it *efficiently*

A note on balance

- No system uses just one solution
- All devices are a combination of compute to control the forwarding and network hardware
- The question is in finding the right balance

The hope of programmable infrastructure

- We can strike a new balance
- Right-size the CPU to the task, reducing both money and power
- Do more with programmable infrastructure, increasing money and power

Flexibility is the key

- Many smart technologies are available
 - OpenFlow and similar switches
 - Many, *many* feature NICs and smart NICs
- The promise is tangible
- The reality is... less so
 - Cost can be equivalent to the software solution
 - Flexibility is present, but it's not *simple* to use these solutions
- A solution I can't easily *use* costs me in time, and therefore money

The promise of OPI

- A solution with flexibility that justifies its cost
- An API with consideration for developers
 - *Open development* at its best means *rapid feedback from end users*
 - To be a success, *listen*
- More flexibility in development
 - If I can control software and transfer a solution to hardware, then I can get moving
 - If I can move from one generation to the next without changing my code, then I can keep moving