

图形化大规模网络设备

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Hackers & Python

PHIL ANSCHUTZ: BUILDING HIS FOURTH EMPIRE

NOVEMBER 8 • 2010 EDITION

Forbes

PAUL
GRAHAM

Y COMBINATOR
REINVENTS HOW
STARTUPS ARE
CREATED

THE
BEST
SMALL
COMPANIES
IN
AMERICA

OUR GURUS
PICK 20 WINNERS





The programmers you'll be able to hire to work on a Java project **won't be as smart as** the ones you could get to work on a project written in Python. And the quality of your hackers probably matters more than the language you choose. Though, frankly, the fact that **good hackers prefer Python to Java** should tell you something about the relative merits of those languages

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钟子飞：偶然发现了网易邮件系统的一个bug,于是好玩写了几行python去exploit了一下；以为他们发现不了，不过今天貌似修复了。让我欣慰了一下，他们还不算太差劲😏

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Python at switch level





#52 **Andy Bechtolsheim**
Sun Microsystems

Co-founder of Sun, who did most of the work toward the invention of the workstation and Gigabit Ethernet.

TOP 100

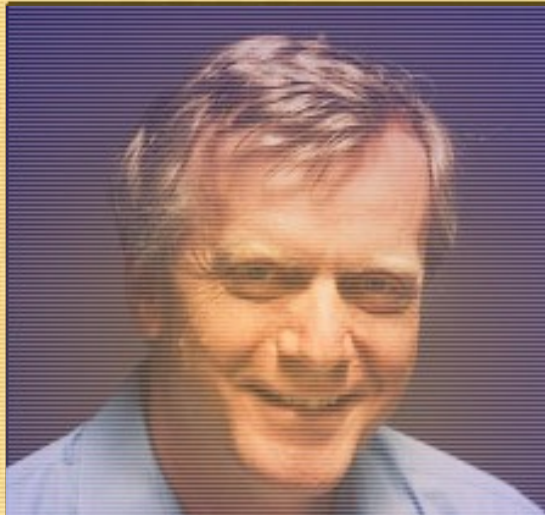
MOST INFLUENTIAL PEOPLE IN IT



#52 Andy Bechtolsheim
Sun Microsystems

Co-founder of Sun, who did most of the work toward the invention of the workstation

Bechtolsheim and Cheriton were two of the first investors in Google, investing \$100,000 each in September 1998. Bechtolsheim **wrote the check to "Google Inc" prior to the company even being founded**...When he gave the check to Lawrence E. Page and Sergey Brin, Google's founders, they had not actually yet been legally incorporated.



#52 Andy Bechtolsheim
Sun Microsystems

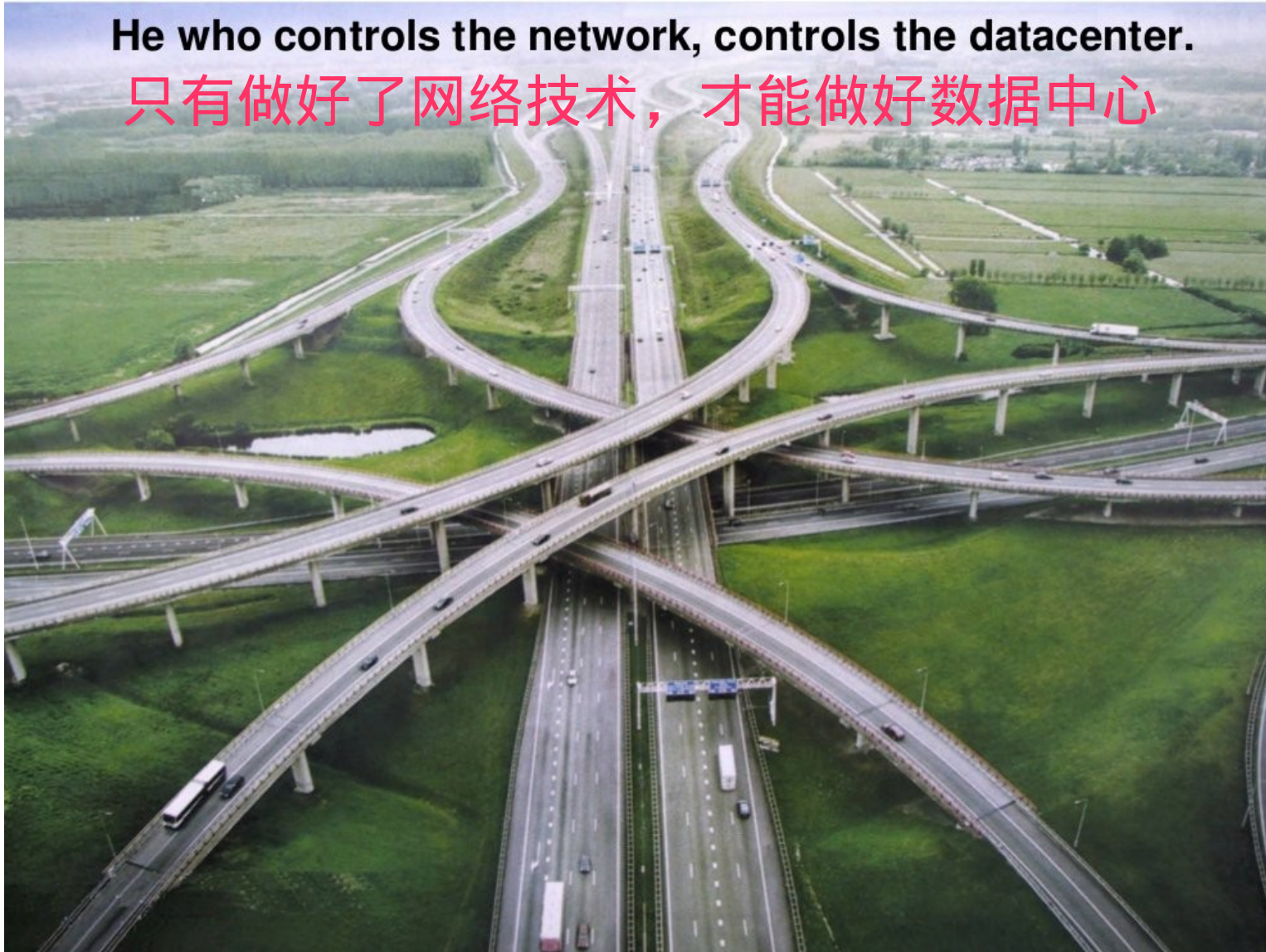
Co-founder of Sun, who did most of the work toward the invention of the workstation

The most profitable for Bechtolsheim was his initial \$100,000 investment in **Google**, which, in March 2010, was worth approximately **\$1.7 billion**.

Page and Sergey Brin, Google's founders, they had not actually yet been legally incorporated.

He who controls the network, controls the datacenter.

只有做好了网络技术，才能做好数据中心





google datacenter



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THE DALLES, Ore., June 8 — On the banks of the windswept Columbia River, Google is working on a **secret weapon** in its quest to dominate the next generation of Internet computing. But it is hard to keep a secret when it is a computing center as big as **two football fields**, with twin cooling plants protruding **four stories** into the sky.





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protruding **four stories** into the sky.





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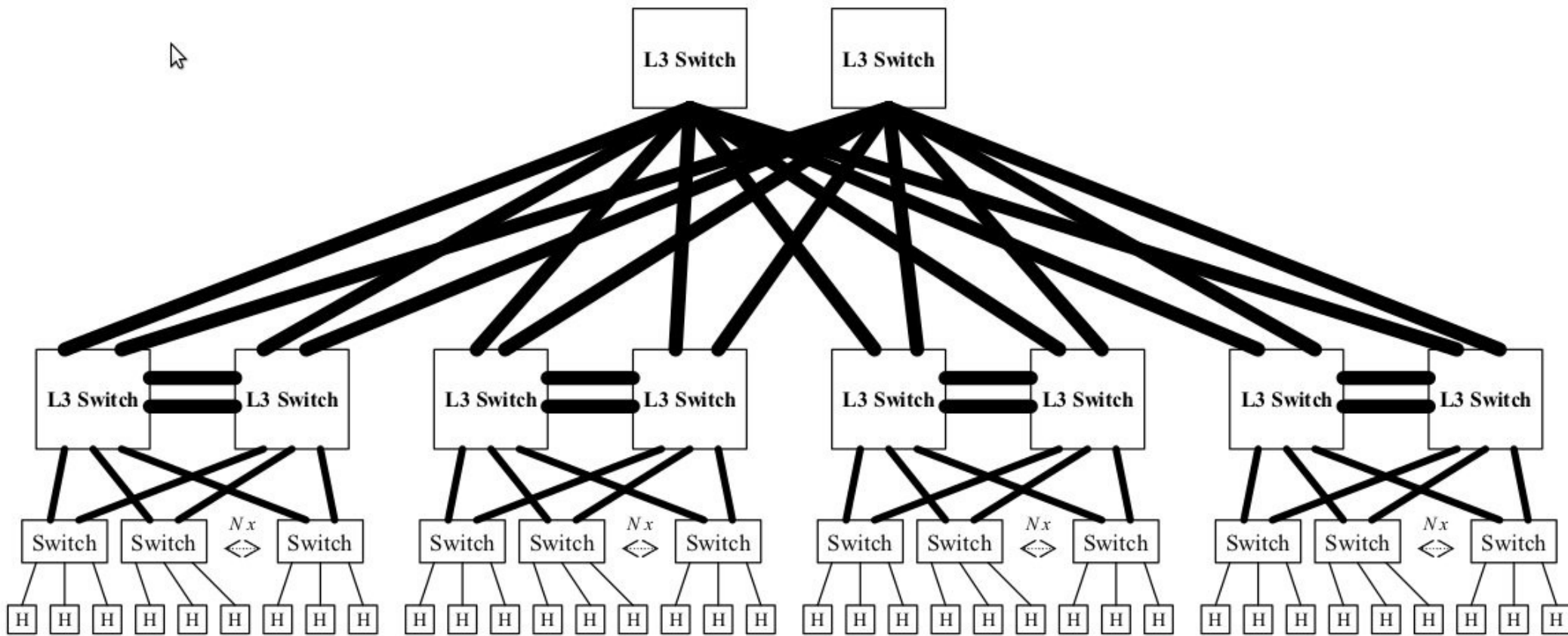


Build Routing Protocols

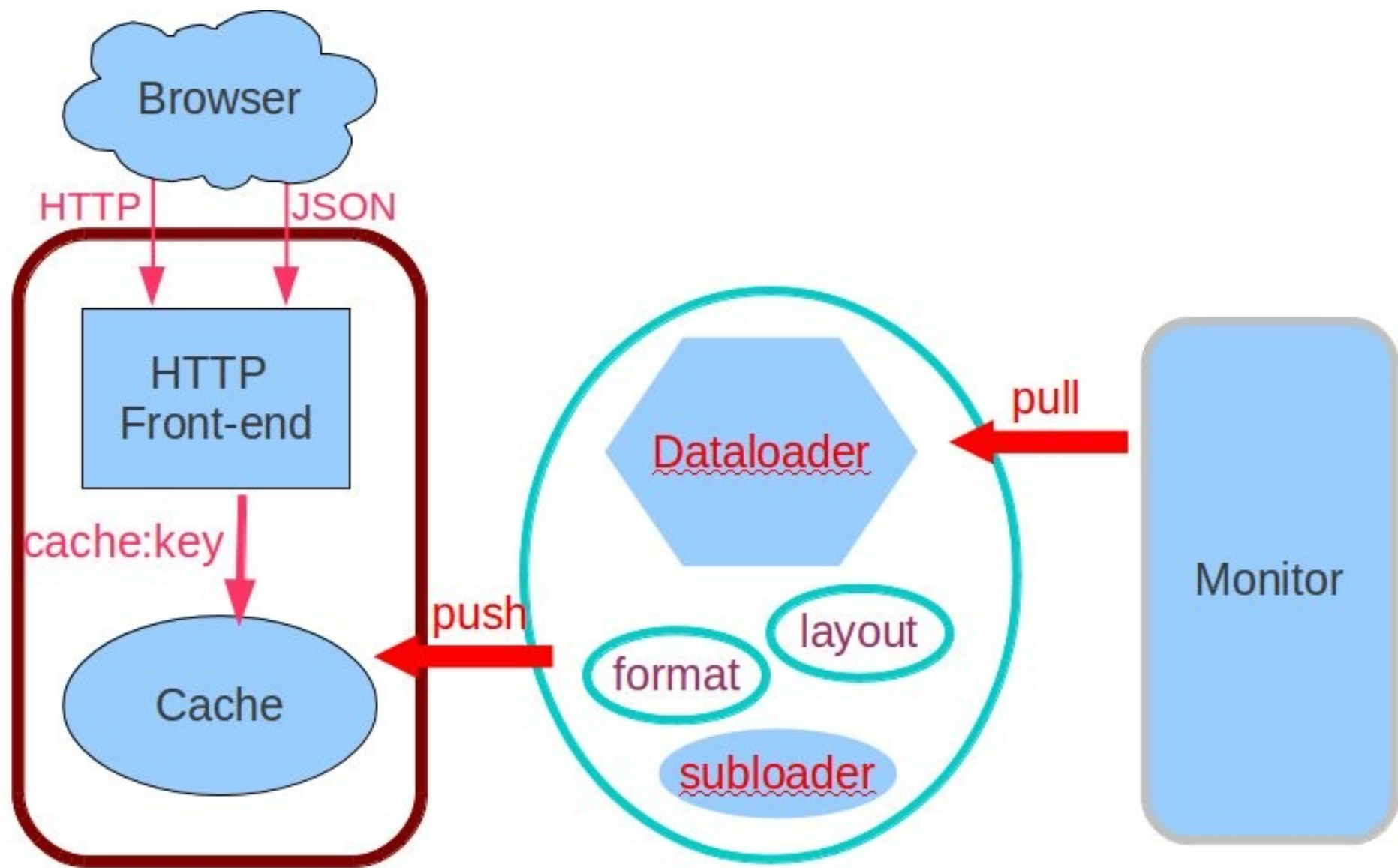
- 代码构成
 - C/Python/asm
- Python 的作用
 - 用 Python 连接模： ARP/SNMP/HAL/IPC...
 - 用 Python 定义并管理 Metadata
 - Protocol Buffer
 - Python Unit Test

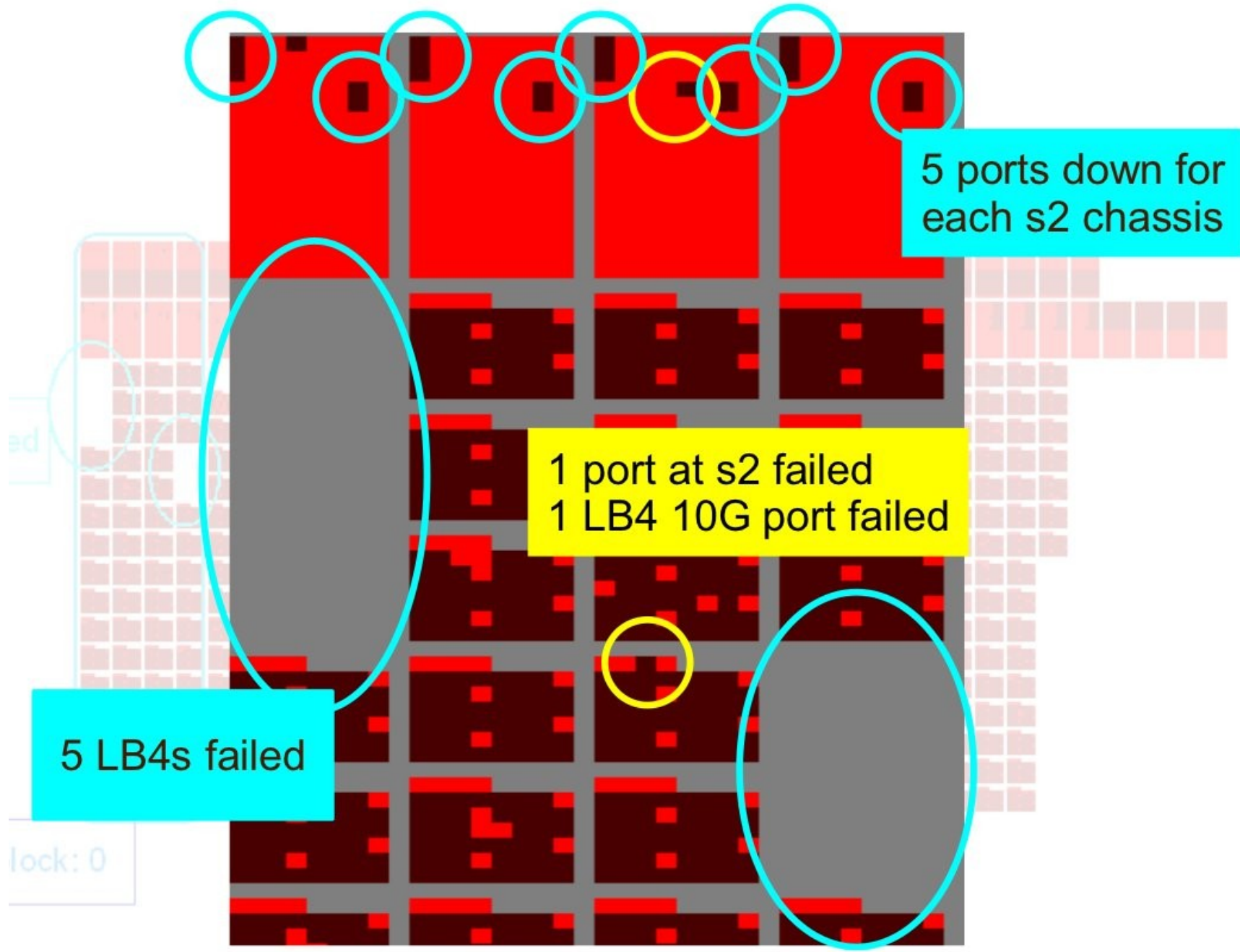
Visualization of Fabrics

3



Thick line >80GE
Medium line 10GE
Thin line GE





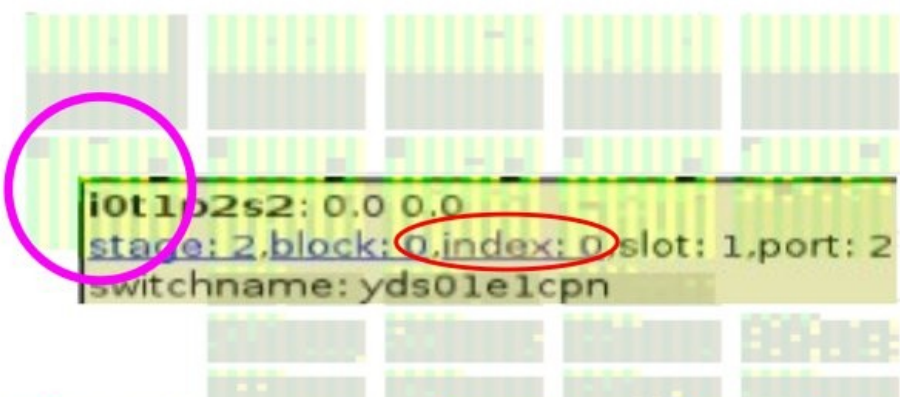
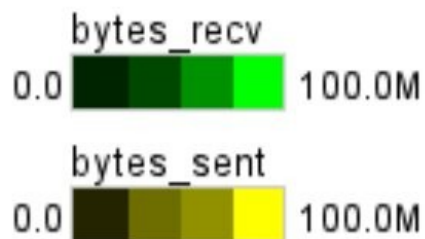
5 ports down for each s2 chassis

1 port at s2 failed
1 LB4 10G port failed

5 LB4s failed

lock: 0

ed



```

iot1b2s2: 0.0 0.0
stage: 2, block: 0, index: 0, slot: 1, port: 2
switchname: yds01e1cpn

```

0.0	0.0	101.1M	87.9M	84.8M	66.2M	7.0	6.8	96.1M	94.0M	90.5M	76.6M	103.6M	79.2M	106.0M	58.8M
0.0	0.0	84.9M	56.4M	97.5M	56.1M	78.4M	47.8M	99.8M	100.1M	93.4M	82.7M	84.7M	78.4M	80.4M	52.9M
0.0	0.0	88.8M	63.5M	67.6M	71.5M	97.5M	96.1M	60.8M	58.4M	100.1M	72.7M	101.3M	69.2M	78.0M	63.4M
80.6M	54.5M	99.9M	74.0M	107.9M	63.9M	65.7M	60.7M	102.3M	99.2M	113.8M	73.6M	0.0	0.0	85.5M	75.4M
75.9M	52.8M	97.6M	81.6M	81.2M	56.4M	71.1M	45.2M	77.1M	65.9M	95.7M	109.5M	0.0	0.0	85.6M	77.8M
85.5M	72.4M	116.8M	102.9M	94.7M	75.7M	117.6M	74.1M	117.7M	108.4M	94.7M	66.0M	103.6M	82.0M	106.5M	77.0M
73.8M	99.2M	109.8M	70.0M	89.3M	60.2M	83.1M	51.0M	90.0M	67.5M	101.5M	76.1M	102.2M	81.7M	106.0M	77.1M
95.0M	69.6M	72.6M	83.4M	90.6M	84.7M	77.7M	52.3M	96.2M	70.3M	103.3M	71.8M	80.4M	74.6M	54.9M	133.5M
57.3M	77.8M	54.5M	73.0M	53.9M	74.3M	62.5M	73.5M	59.2M	73.5M	59.2M	69.3M	58.3M	71.0M	57.1M	75.0M
55.2M	67.6M	56.2M	73.8M	53.0M	67.8M	57.8M	74.3M	57.8M	71.5M	60.9M	70.7M	58.4M	76.2M	54.6M	71.8M
57.9M	71.9M	52.1M	65.7M	54.7M	74.1M	61.5M	71.1M	60.7M	72.2M	58.0M	65.1M	59.6M	68.6M	64.3M	77.2M
57.7M	73.9M	58.8M	65.4M	51.0M	69.7M	63.5M	72.4M	54.5M	74.2M	57.5M	77.4M	51.0M	74.9M	53.3M	78.0M
60.8M	69.2M	59.0M	76.6M	56.1M	72.5M	54.7M	74.4M	60.9M	77.9M	53.1M	80.2M	59.0M	75.4M	56.2M	77.7M
59.1M	74.3M	57.2M	75.9M	56.1M	73.1M	52.3M	76.5M	56.9M	75.7M	55.6M	74.2M	55.1M	74.0M	57.8M	73.8M
55.1M	77.3M	78.9M	72.4M	56.2M	72.4M	54.7M	74.2M	53.6M	72.4M	55.9M	67.8M	59.6M	70.1M	58.4M	67.5M
60.0M	70.5M	56.0M	68.7M	61.3M	73.6M	59.1M	66.8M	53.9M	75.6M	58.9M	69.8M	60.3M	72.5M	54.1M	68.4M

Thanks!