OpenFabrics Usage and Adoption Issues

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SAND- 2009-1707C

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A lightweight node experience

- We're building lightweight node clusters

- Very small footprint, fast boot, no rc scripts

- Had trouble getting IB going

- Decided to try the OFED init script

- It failed because it could not find gcc (!)

  - A true WTF moment

- Next moment: script is 1404 lines

- A standard script is usually 150

Don't believe me?

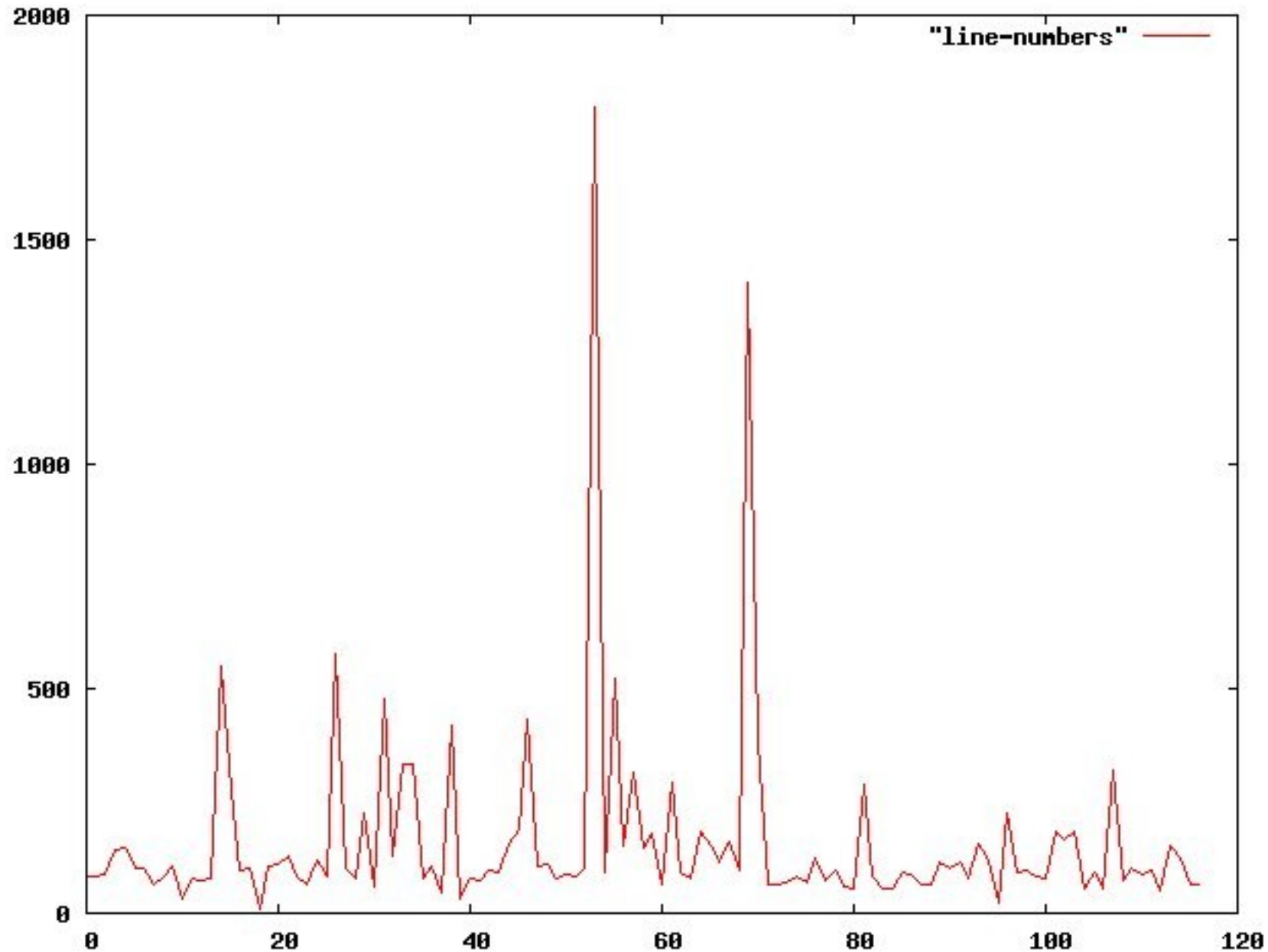wc /etc/init.d/openibd

 1404 4869 44705 /etc/init.d/openibd

[rminnich@talon ~]$ grep gcc !$

grep gcc /etc/init.d/openibd

   echo "GCC version: `gcc --version`" >> $DEBUG_INFO

[rminnich@talon ~]$

Spot the outlier

OFED issues with startup

- If a script is calling gcc to test errors, something is seriously wrong with design

    – Which won't get fixed in OFED 1.++

- If an init script is 1400 lines, something is even wronger

- OFED is clearly an aftermarket bolt-on part than a true system component

Building tools

- No one I know likes the tool build setup
  - And has not for years
- Non-obvious setup: some tools here, some tools there, no obvious reason save history
- And the make setup
- And tarballs
- It doesn't feel like a piece of anything else

Building tools

- What do I want?

- Build: make

- Link: -linfiniband

- I don't really know, or care, about all those libs

- But they're all interrelated

- I want src/{bin,lib,include}

- Not zillions of different directories with non-obvious relationships

- Current structure is legacy

And speaking of tools

- We had a need to get raw data out of the card

- Obviously, that's a library function, right?

- NOT!

- We had to rip a program apart and build a new program

- The library/program boundary in OFED is awkward and hard to use

Question: why can't I use ib0 to install Ubuntu Linux?

- Because OFED is still a bolt-on

- Think about it: when's the last time you had to think hard about using Ethernet

- It's taken for granted

- And that's the really big problem with OFED and hence IB

- As built, and installed, and used, it's still a bag on the side

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So the real takeaway

- At the end of last year's meeting I commented to (name removed) that the existence of OFED 1.4 meant we had to some extend failed

- He agreed

- Until we no longer need OFED, IB has not succeeded

- So we need to figure out how to move forward

- But I do know: OFED, great in its time, once forward path

- Is now a barrier to further success