IBM z13.
Huh?

Big Blue’s announcement raises questions!

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Abstract

- IBM just recently announced the latest generation of their mainframe systems. This is the thirteenth generation since they switched to CMOS processors in 1994; following the well-established “z” naming they’ve used since 2000, IBM aptly calls this the z Systems z13. The z13 introduces a variety of new features, as expected, but aspects of its architecture, timing and naming raise questions for the community of mainframe users. This presentation will take a look at some of those questions and their implications for future trends in this fundamentally important computing platform.

- **z13 selected New Features**
  - SMT, SIMD
  - Assorted I/O changes

- **Architecture Questions**
  - ICA… and sometimes Y

- **Naming Questions**
  - Whither BC?

- **Timing Questions**
  - How low can we go?
z13 selected New Features

- SMT/SIMD – it’s about time!
  - zIIP/IFL only for SMT, and watch for single-thread execution time
  - Use optimized libraries for SIMD
- Crypto Express 5S… Express5S?
  - Double the capacity – yay! Now we have as much on a single card as we did with Express 3C. But what about effective capacity?
- FICON 16S
  - Only negotiates down to 4Gbps… watch for old infrastructure!
- OSA Express 5S
  - 10Gbps cards have only one port, and won’t work with 1Gbps machinery
- And some things haven’t changed…
  - New profiles for CoD features probably unavailable after LIC EoM.
some other New Features

• Stealing Jim’s thunder? Who, me?
• Multiplex Pricing (CMLC)
  • Interesting opportunities! ‘Flattening’ demand spikes across sites; potential for cross-site workload sharing. Drops one barrier for ‘Business Resiliency’ models.
• IBM Collocated Application Pricing (ICAP)
  • Great if you’re growing new workloads. Not so much if you’re workloads are ‘traditional’ or growth is organic.
Architecture Questions

• Coupling Facility links
  • Infiniband turned up on the scene with System z10 in 2008
  • Coexisted with ISC3 on z10, z196, zEC12
  • z13 is the first generation to no longer support ISC3…
    … and the first to introduce Infiniband’s replacement
  • Now we’re moving to ICA?

• And still no more fan-outs…?
  • This is OK for very large enterprises using multi-drawer CECs.
  • What about single-drawer CECs and Business Class machines?

Oh, WAIT!!!
Naming Questions

• z13... not z13EC or zEC13, so will there be a little brother?
  • “Business Class” machines usually trail “Enterprise Class” machines to market by about a year
  • Naming has explicitly hinted at little brother in many generations: z9EC, z10EC, zEC12
  • IBM reps are being cagey...

No, wait...
I think Jim answered that.
IBM appears to be shortening the life cycle for "marketing availability"

But let's see...
• IBM definitely is trending to shorter life cycle for “marketing availability”

• But do we care?
Timing Questions

- IBM won’t predict future withdrawal dates (of course).
- But we can! It looks really bad...

Length of Time Marketed, IBM Mainframes by Model, z900 to present
"Conservative" Projections

- Withdrawal dates estimated based on continuation of withdrawal dates every two years

Years from GA to Marketing Withdrawal

GA dates shown in bold white for each model

HW Withdrawal dates shown in bold green for each model

IBM Mainframe Hardware Model

IBM won’t predict future withdrawal dates (of course).

But we can! It looks really bad...
• IBM won’t predict future withdrawal dates (of course).

• … or we can be more generous.

But it’s still pretty bad!

Timing Questions
Questions?
Selected References

My material comes from broad reading in the public realm as well as from day-to-day experience; this is just a small sample of recent relevant articles rather than an exhaustive list of references. In reverse date order…

- **“Parallel Sysplex”**
  - IBM website as of Apr. 13, 2015
    - [http://www-03.ibm.com/systems/z/advantages/pso/ifb.html](http://www-03.ibm.com/systems/z/advantages/pso/ifb.html)

- **“IBM System z10”**
  - Wikipedia as of Apr. 13, 2015

- **“Country Multiplex Pricing”**
  - IBM presentation & audio file, Mar. 3, 2015

- **“IBM unveils z13 mainframe to tackle burgeoning mobile transaction data”**
  - V3.co.uk tech news site
    - This article was my first authority for Crypto Express 5S processing chips being twice as powerful as the 4735 chip in the 4S and 3C cards.

- **“IBM z13 and Crypto”**
  - Greg Boyd, Mainframe Crypto LLC, Jan. 2015

- **“IBM z13 Technical Guide”**
  - IBM SG24-8251-00, draft as of Jan. 15, 2015

- **“IBM z13 FAQ”**
  - IBM ZSQ3076-USEN-pp, Jan. 2015
**Appendix: IBM Mainframe Dates (1 of 2)**

- Showing projected “generous” marketing withdrawal dates for zEC12, zBC12 and z13 based on the assumption (driven by historical data) that marketing withdrawal announcements will be made no earlier than a year after general availability of the replacement generation, and will take effect no less than nine months after the withdrawal announcement. Service withdrawals are projected to take effect on Dec. 31st after the twelfth anniversary of GA.

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### IBM z Systems historic announcement & withdrawal dates

<table>
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<tr>
<th>CMOS Generation Number</th>
<th>Series Name</th>
<th>Model Number</th>
<th>GA Announcement Date</th>
<th>GAU Announcement Letter</th>
<th>GA Date</th>
<th>Marketing Withdrawal Announcement Date</th>
<th>Marketing Withdrawal Announcement Letter</th>
<th>Marketing Withdrawal Date (New)</th>
<th>Marketing Withdrawal Date (HW Upgr)</th>
<th>Services Withdrawal Announcement Date</th>
<th>BNSU Withdrawal Announcement Letter</th>
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Appendix: IBM Mainframe Dates (2 of 2)

• And now, in graphical form...

History of IBM Mainframe Models, z900 to present, 'generous' withdrawal projections

- Not yet announced
- Announced (date shown)
- Available “GA” (date shown) - generous
- Upgrade Sales Only - generous
- LIC Sales Only (date shown) - generous
- Service Only
- Today’s Date

- 2001-12-31
- 2002-02-28
- 2003-05-13
- 2004-04-07
- 2005-09-30
- 2006-05-26
- 2007-03-16
- 2008-02-26
- 2009-06-30
- 2010-09-30
- 2011-09-09
- 2012-08-28
- 2013-07-23
- 2014-02-25

- Marketing withdrawal dates are estimated for zEC12 and newer models, assuming withdrawal announcement no less than a year after replacement announcement, and withdrawal no less than nine months after it’s announced.
- Services withdrawal dates are estimated for z890 and all newer models.

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