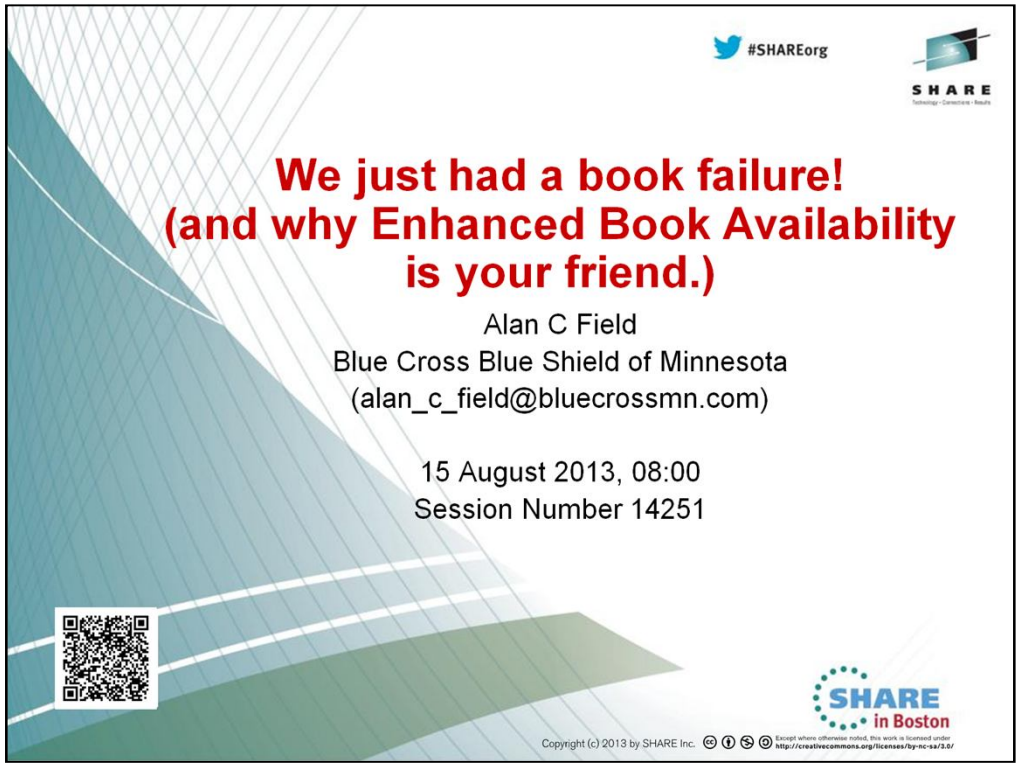
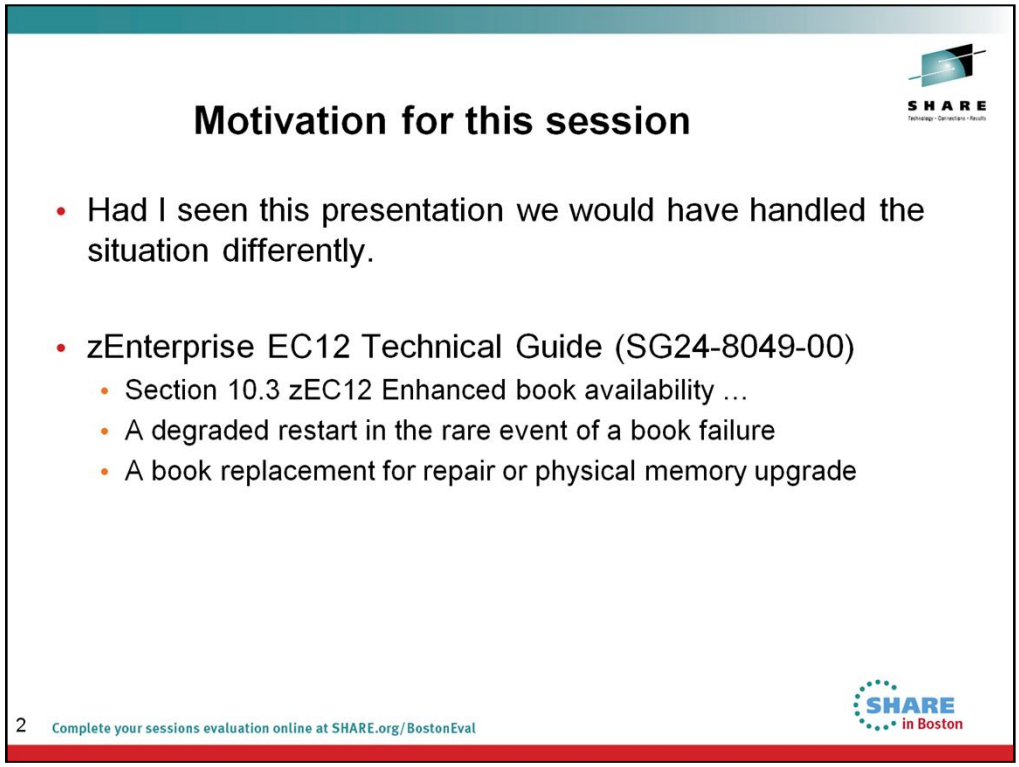


A what? Only the second zEC12 book failure since the machines started shipping. This failure was not the same as the first one.



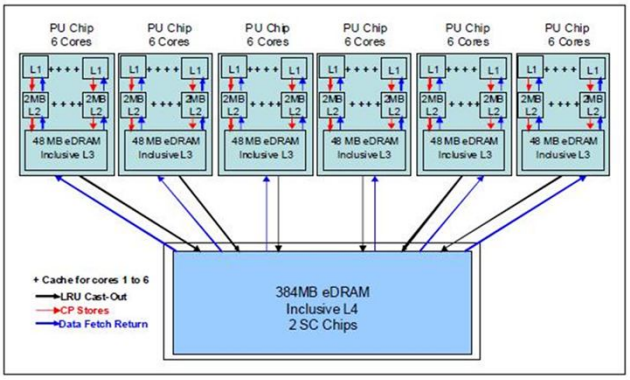
Up to now nothing can really prepare you for this situation. If I had seen this presentation before this event we would have reacted quite differently and had the bulk of our applications up and running in a couple of hours.

With this information you can avoid the mistakes we made and get up and running quickly.

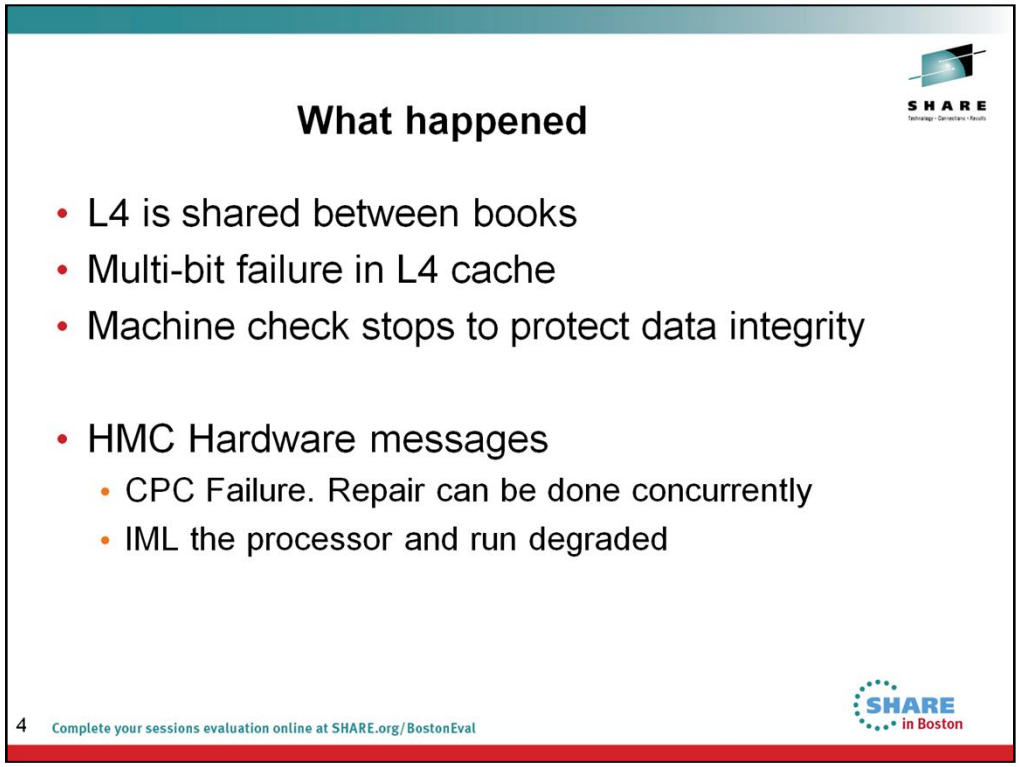
Enhanced Book Availability is most commonly used for a planned outage for repair or memory upgrade.

The Redbook alludes to it's use in a book failure but even after the event it wasn't clear to me how to apply the information to a failure.

Review…



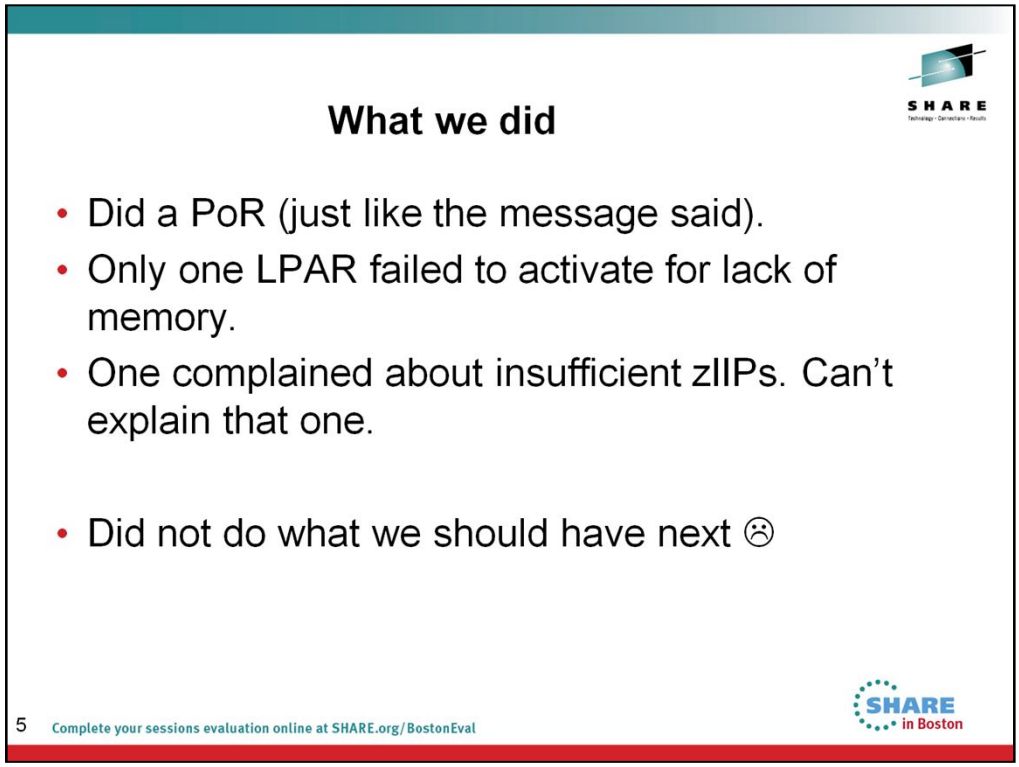
Revision or new information? Note the L4 cache. I'll talk about it on the next slide.



And when it check stopped the first thing I heard was “Our consoles have disappeared. And there are no icons on the HMC”

On top of that the processor call home failed which was a firewall and network problem we created so we had to call in to IBM and report the failure.

On the HMC: Console Actions -> Hardware Management Console Settings -> Customize Outbound Connectivity -> Configure -> Test -> Start



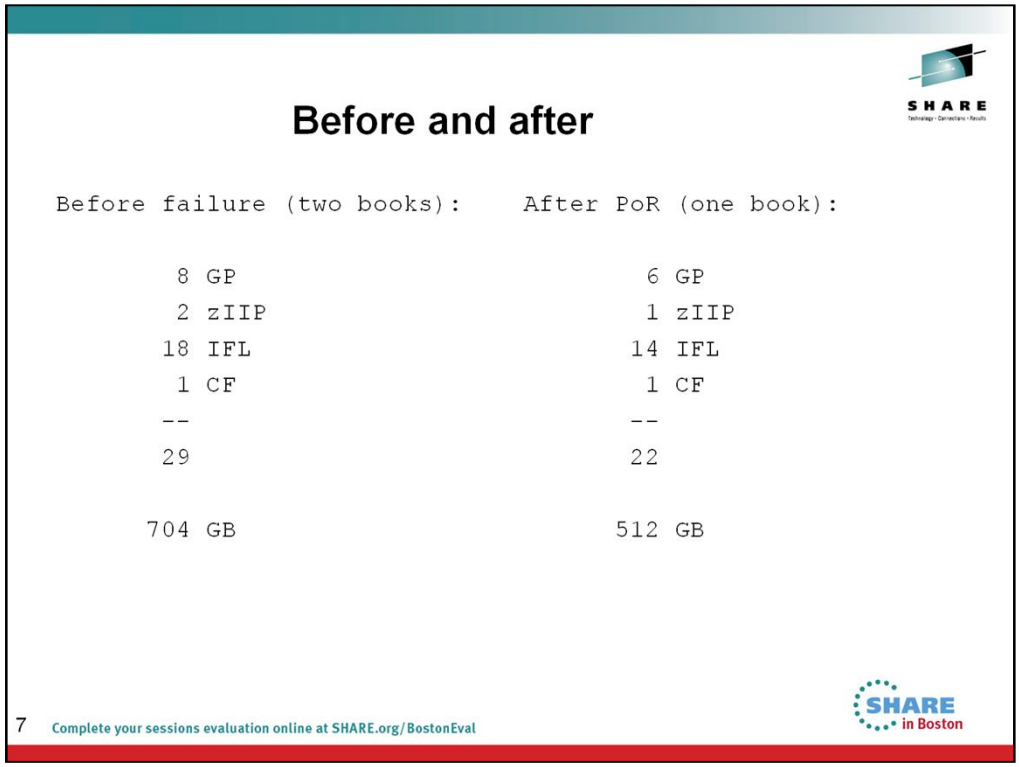
This is where you need to pay attention. This is where the magic begins.

Unfortunately I didn't capture the messages at the time and they couldn't be found in any logs so I wasn't able to get the exact message when the dust settled to review.

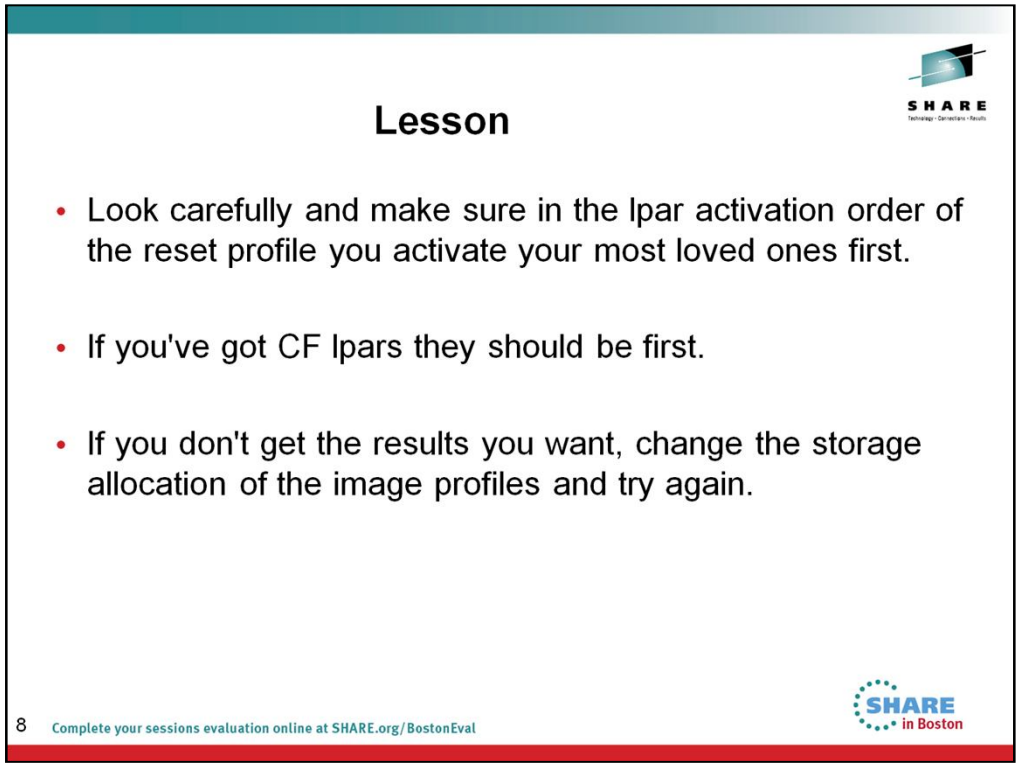
What we didn't understand

- ALL the remaining book resources are available (not just the ones we purchased)
- i.e. PUs, memory
- The system allocates the PUs according to some algorithm.

I'll show you what I mean on the next slide.

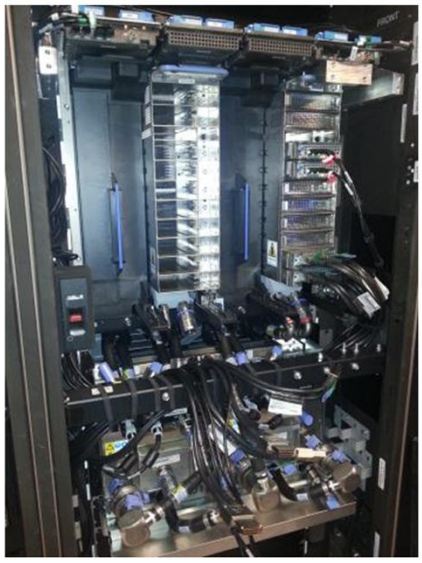


This shows the two working books configuration and after PoR how the remaining book got configured. The other 5 PUs in the book are reserved for SAP and a spare. Note all the installed memory (not just the 352 GB we purchased) is available.



I use a spreadsheet with all the LPARs listed with a column for memory and activation order. Sort it in activation order and sum the memory and you can predict which LPARs won't activate.

Ready to remove



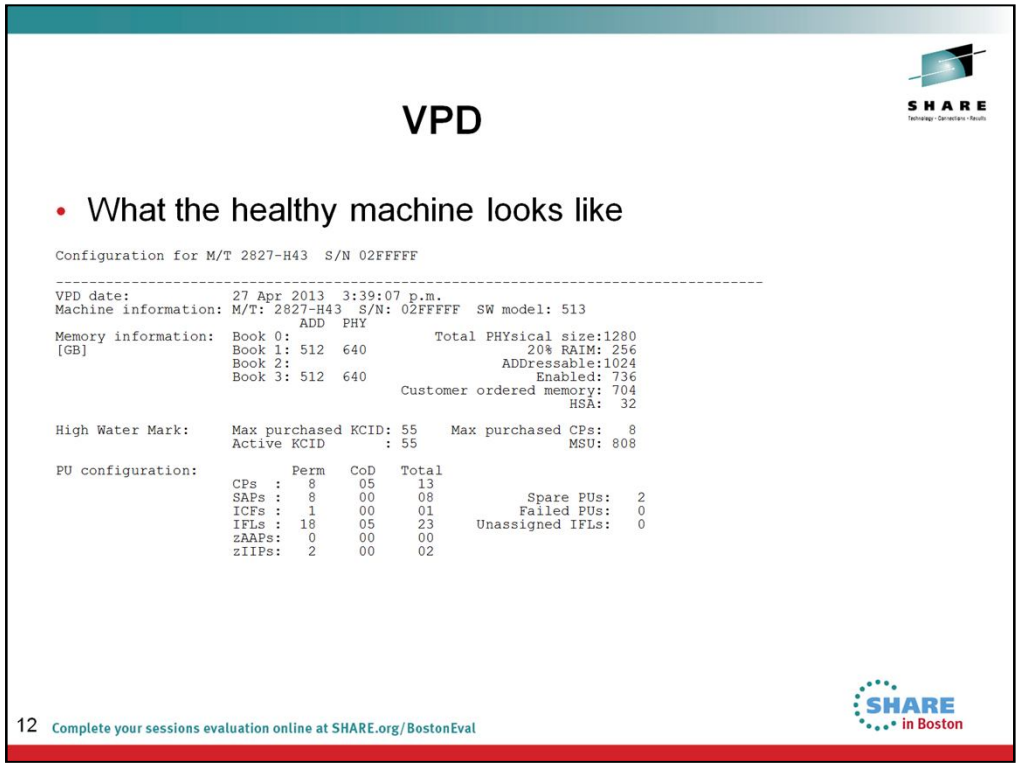
This shows the book (left hand one) ready to be removed. Interface cables removed. Cooling still connected.

Memory

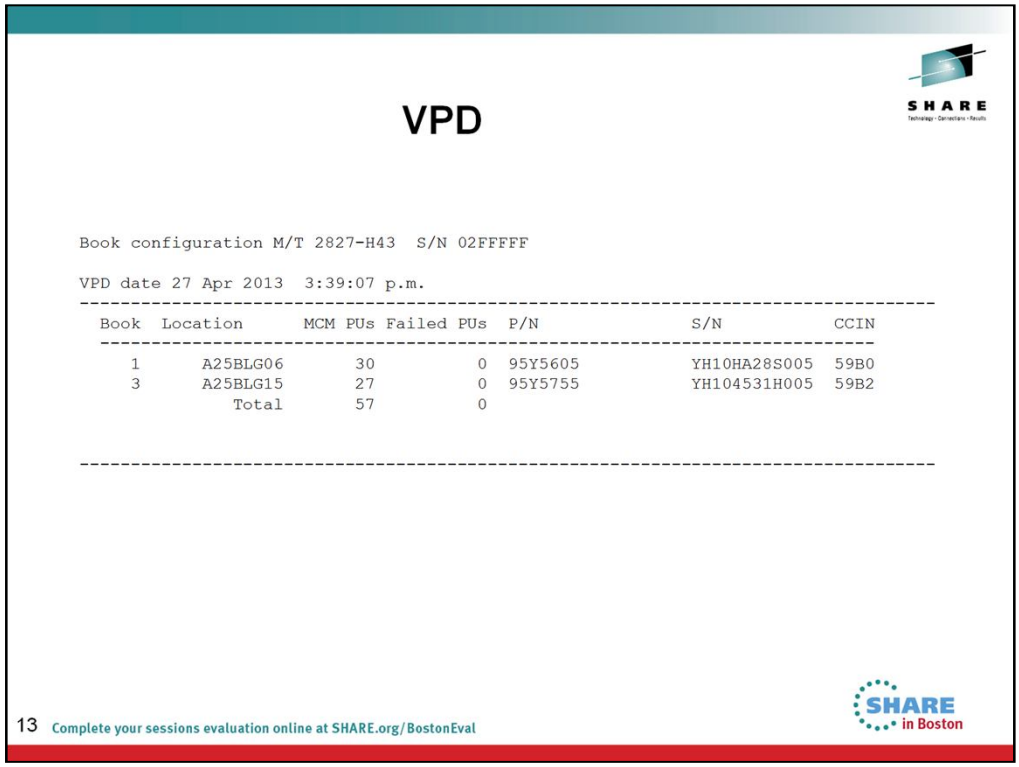
It didn't occur to me that the replacement wouldn't have have memory installed. Here the CE's are swapping memory from the failed book to the replacement.

Dealing with the water

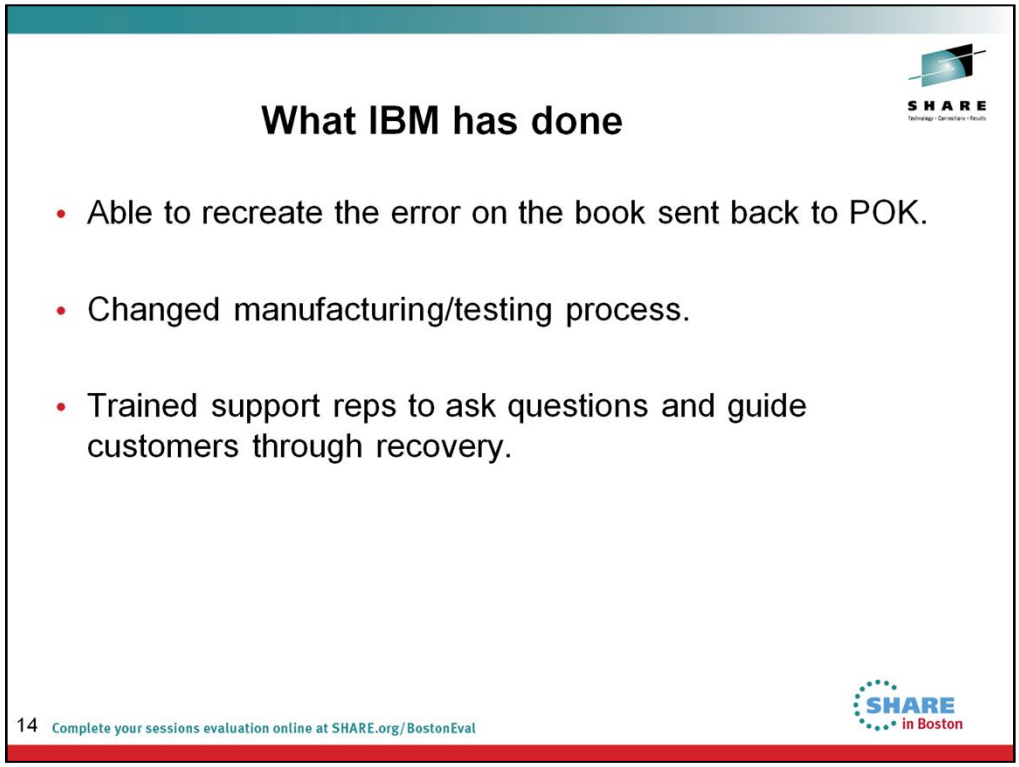
Here's the Fill and Drain Kit in use. We had to drain coolant, and here we are putting it back – about a litre. Not a drop was spilled.



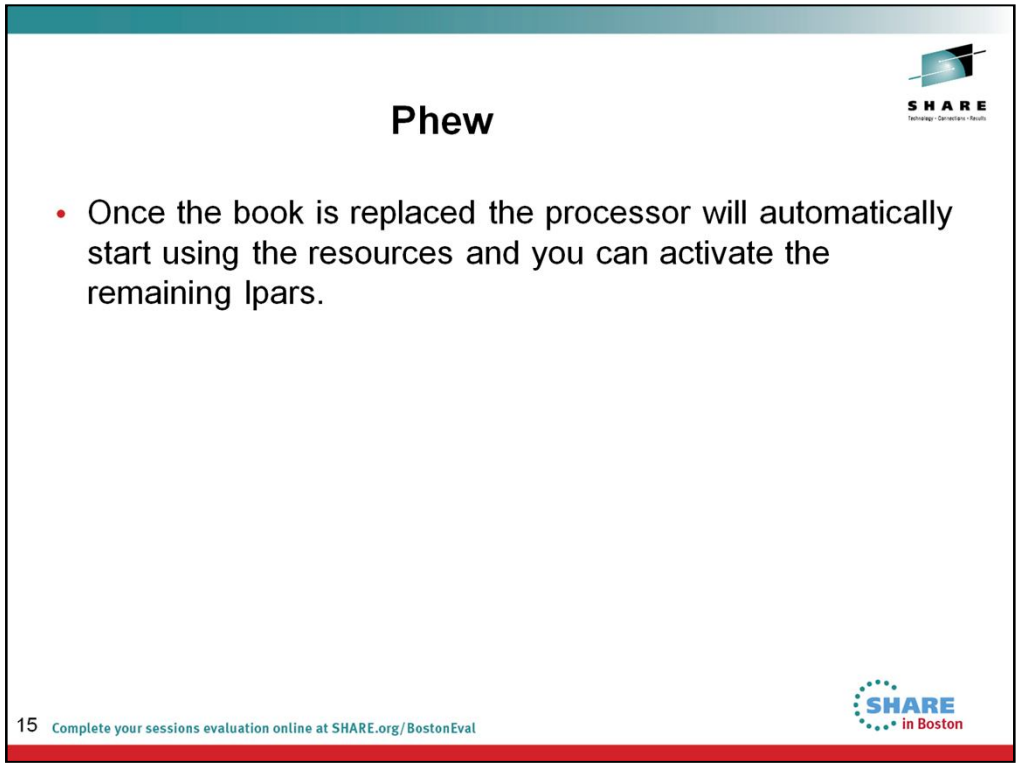
Your IBM team can get this VPD data for your machine.



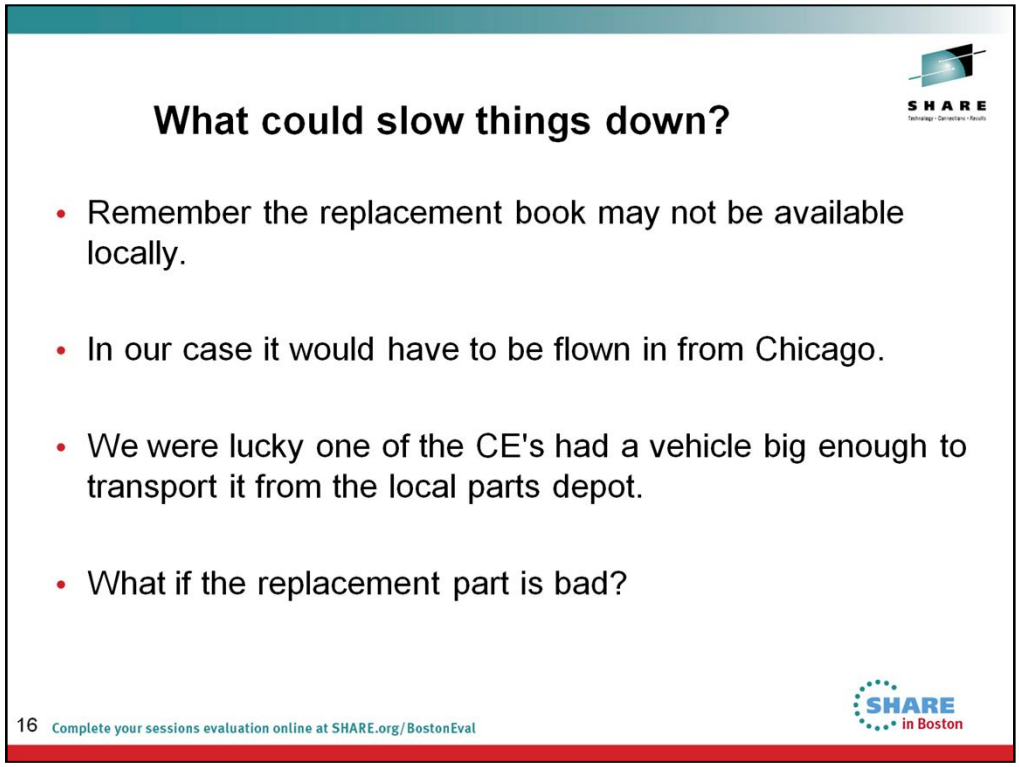
Here's more VPD data. Note the replacement book (Book 1) has 30 PUs. That's because the replacement books in the field are for the HA1 model.



A number of phone calls with IBM engineering. These were the major points from the final review.

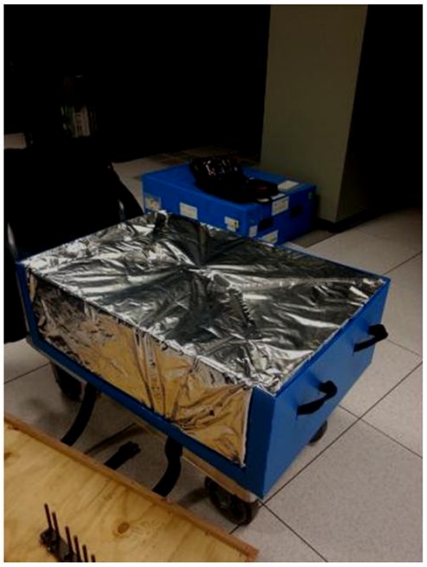


This is pretty cool. No PoR needed to start using the replaced book.

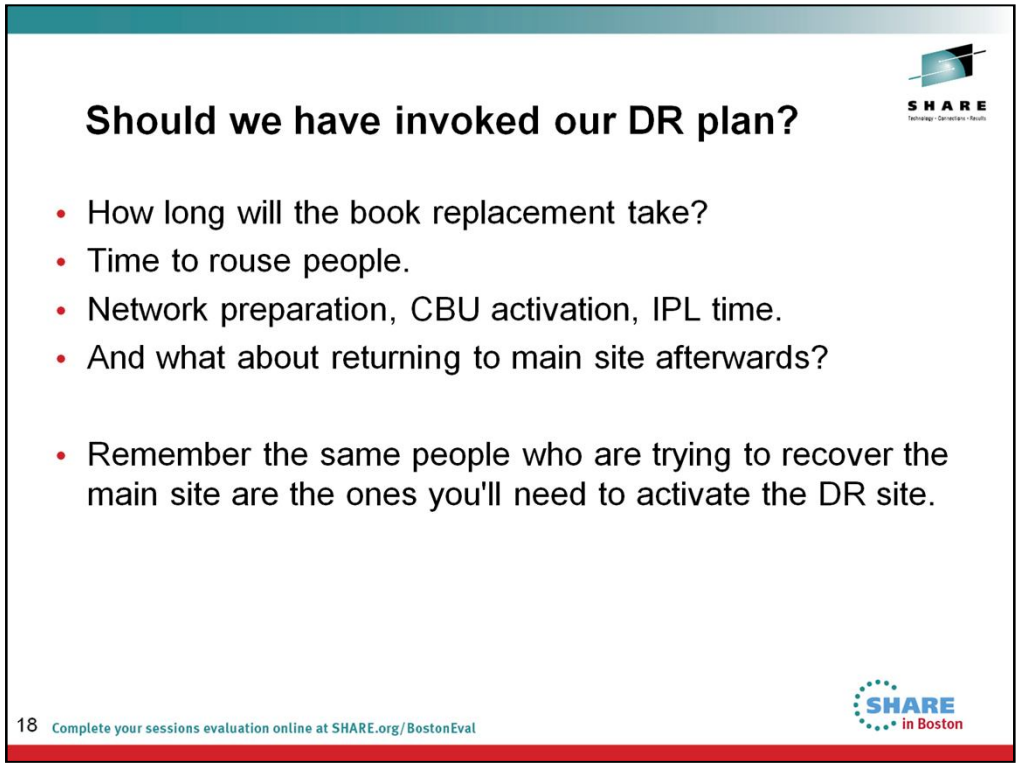


For the single book folks – this applies to you too!

It’s bigger than a bread box



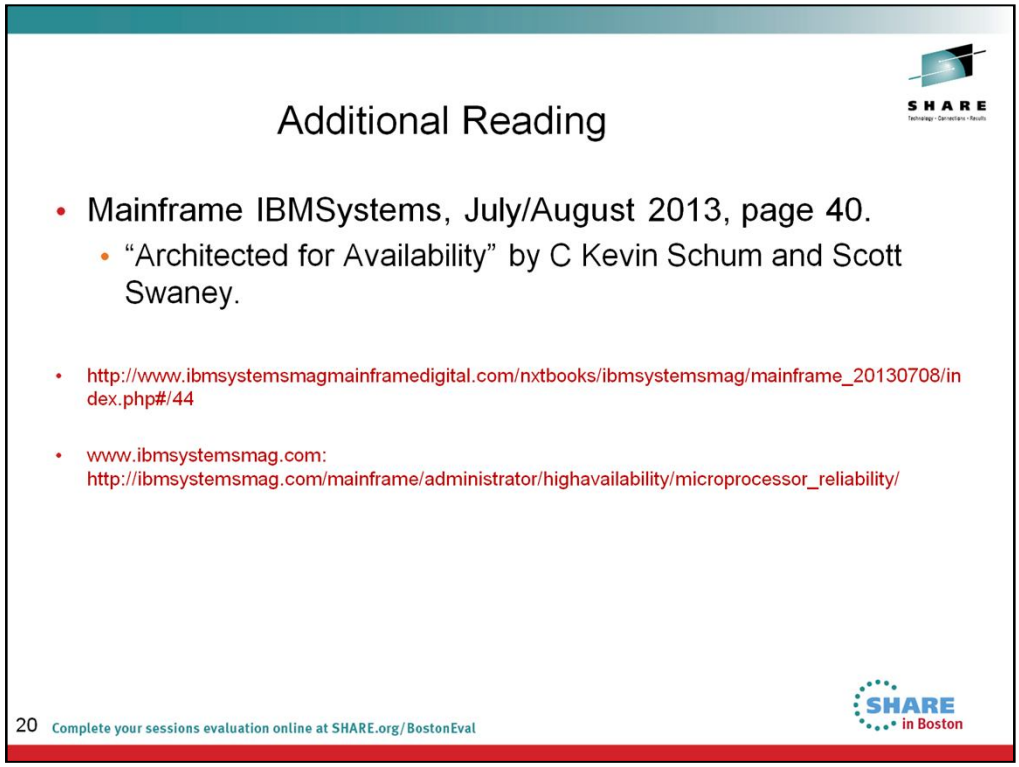
This is how the replacement book arrived. The packing became the coffin for the failed book on the way out.



These are some of the questions you have to ask/think about.

Conclusion

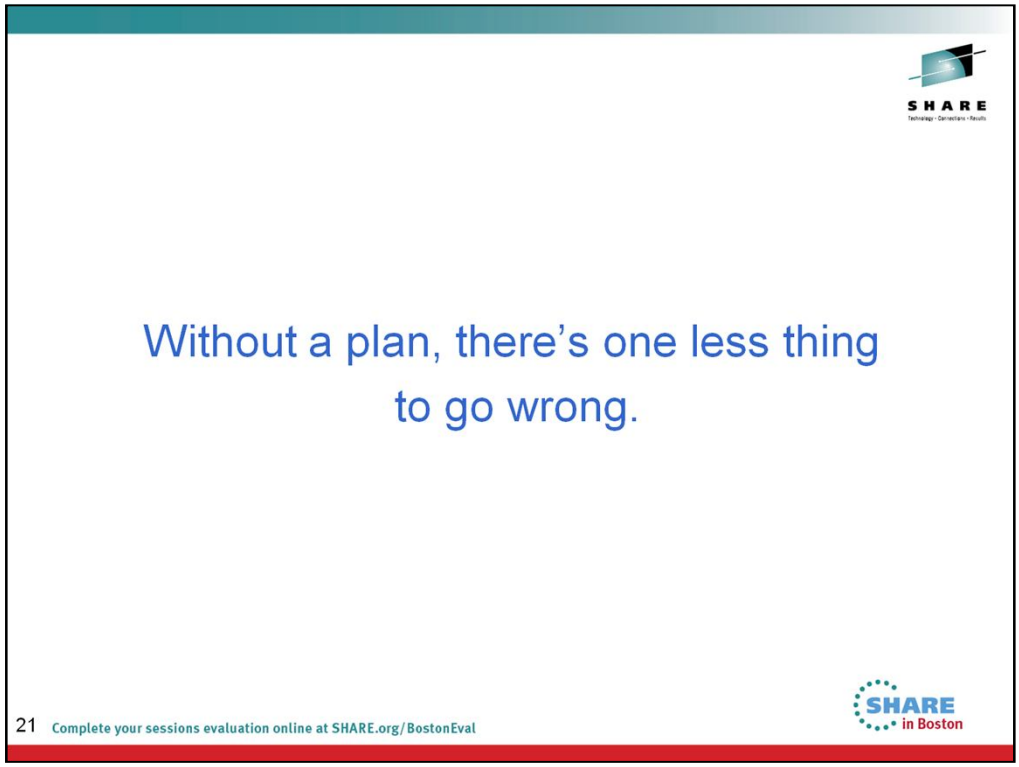
- Had I known and understood this we could have had our production environment up and running again in about two hours instead of closer to six hours.
- I hope you never go through an event like this but if you do, remember this presentation and how you can reduce the pain to your organization.



I found this article very interesting in light of what I learned as a result of the book failure.

Thanks Beth at MSP TechMedia for the links. Watch the wrap ☺

And always remember …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