**Summer project:**

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Limitations:

1. 900,000,000 SET Events take 3 hours to parse in Xplorer (only 7 mins out of ~25mins)
2. Filter on xplorer also takes 1hr to take 35% of that 900,000,00
3. Excel can only handle ~1 million events
4. Python could be a lot more efficient if SET events were named with similar syntax

Solutions:

1. CLI Xplorer instead of GUI Xplorer
2. Spotfire instead of Excel

Tracing command receive and completion:

1. cmd received index 7b

LBA: 63E76E0

2. FE: API HA FW Pop <HA QID|Cmd Idx|QSize> use cmd index to find

3. FTL: HRF: Start Handle Flow (FFLBA-| sector offset| cnt| \*HIMCmdIdx - host) use cmd index to find

4. FTL: HRF: Start translate (FFLBA-) USE FFLBA NOW

5. (if happens) FTL: HRF: Flow suspend (FFLBA-| Ctxt-| \*HIMCmdIdx - host read only) when suspended the ctxt comes

FTL: HRF: Flow resume (Ctxt-)

FTL: HRF: Start translate (FFLBA-) still using FFLBA

Flow and start happen at the same second

FTL: HRF: Flow suspend (FFLBA-| Ctxt-| \*HIMCmdIdx - host read only)

FTL: HRF: Flow resume (Ctxt-)

FTL: HRF: Start translate (FFLBA-)

6. FTL: HRF: Finish translate (FFLBA|JBA|FMUsCnt|\*prftch done|\*preload cline) HAS JBA

7. FTL: PSR: host read (JBID-|jbFmu|secOffset|secLength|streamStat|cmdIdx|cmdOset) DONE WITH FTL

8. FTL: PSR: host read VBA (VBA-) 0x060C4D9C USE VBA NOW

FTL: PSR: host read VBA (VBA-)0x15FF4D40 THERES 2 WHY!?

9. PS: Debug: DGM Submit PS Req (dgId|ReqIdx|ReqType|VBA|secCnt|blkType|validCnt)

10. PS: CVD: TT params (vba32| stat|TTIdx|blkType| s3210| SB|s654)

11. PS: OTG: Sense CVD vba|Data0|Data1

12. PS: OTG: Sense reqIdx| VBA| DeVBA0| DeVBA1

13. PS: OTG: Host Read Transfer (Cmd Idx| Cmd Off| reqId| vba| DeVBA0| DeVBA1) DONE WITH PS

PS: OTG: Host Read Transfer (Cmd Idx| Cmd Off| reqId| vba| DeVBA0| DeVBA1)

0x0000007B|0x00000020|0x000000AF|0x15FF4D40 VBA CHANGED EVEN THO CMD INDEX DIDN’T?!

14. HNVMe descriptor completion USING CMD INDEX

15. Cmd comletion

**Hard part:**

Cmd Idx are not formatted similarly both the hex digit and the name are different.

Questions:

will a FFLBA ever be used again in a run

why is the Flat LBA difference from the FFLBA

does IOP include FW events or only HW