**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
   1. Lower()
   2. vba vs VBA, or cmdidx or cmd idx
5. 500,000 SET events proceed over 15 seconds
6. 10,000,000 set events in 40 secs on python script

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

**Methodology:**

Initially used data structure to hold the results but can save space complexity by directly writing to a csv

**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

6/28 Running script 1 on test 1 from day 1 ran into scenario where