

Memory Address Decoding and Analysis



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Motivation

- Analyzing memory error logs can help us to identify and fix previously unknown faults in memory

What's a fault? What's an error?

- A fault is the underlying cause of an error
- An error is a manifestation of a fault

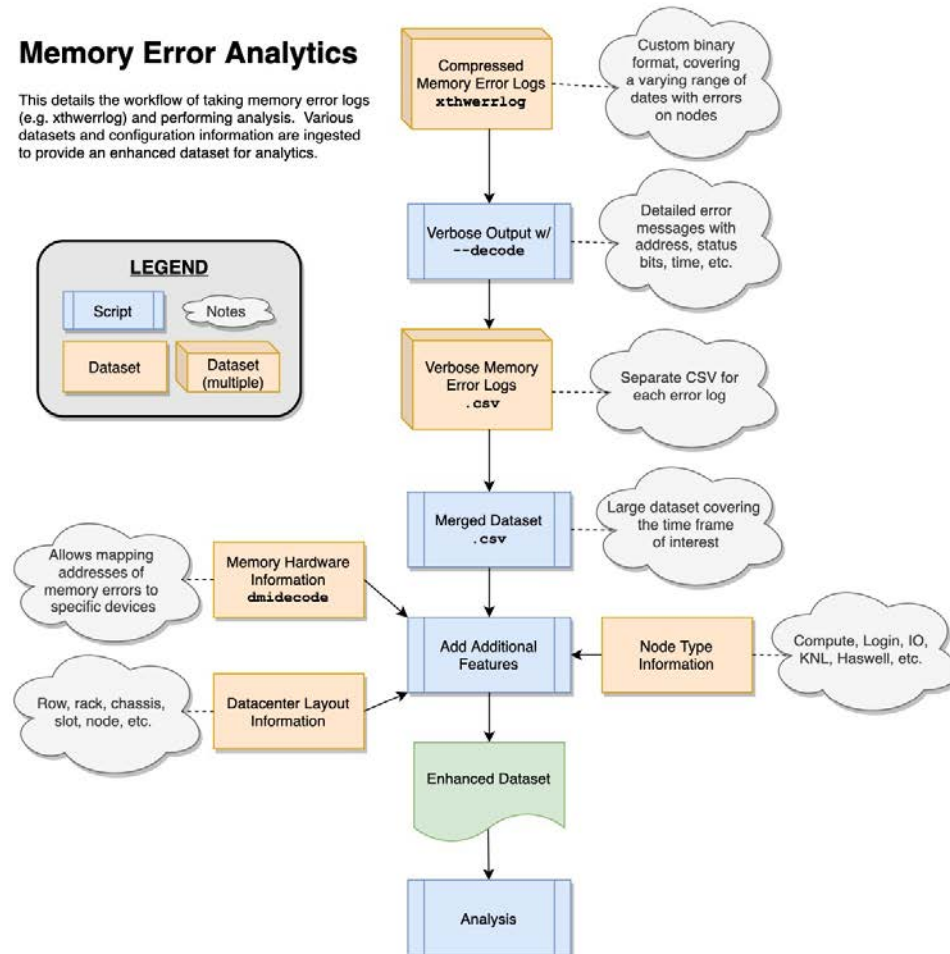
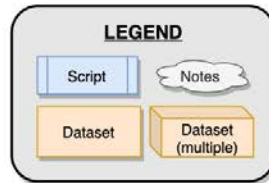
```
for(i = 1 -> 1,000,000): read_memory_address(A)
```

- If memory address A has a permanent fault, then we'll get a million errors. But there is only one fault

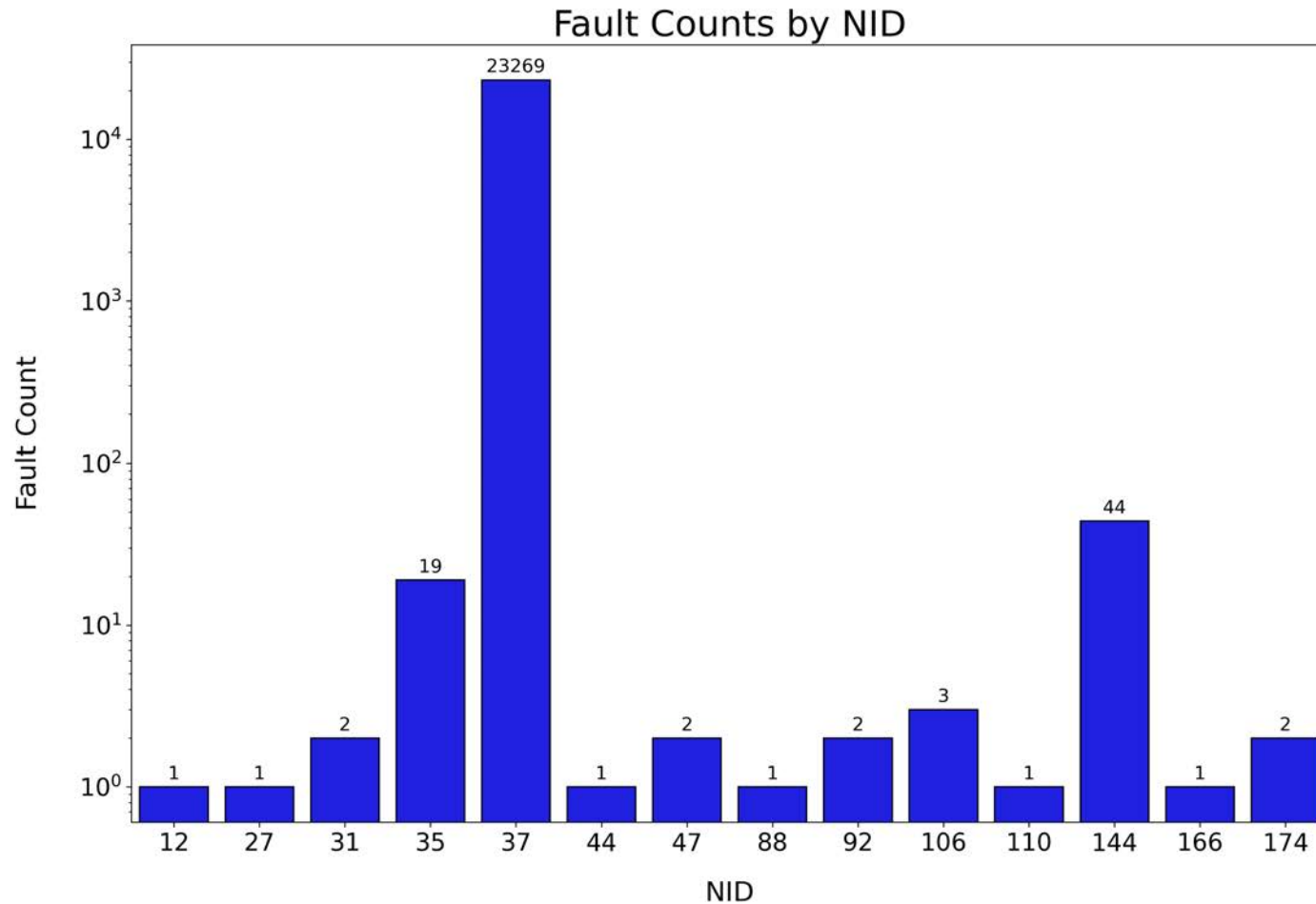
Methodology

Memory Error Analytics

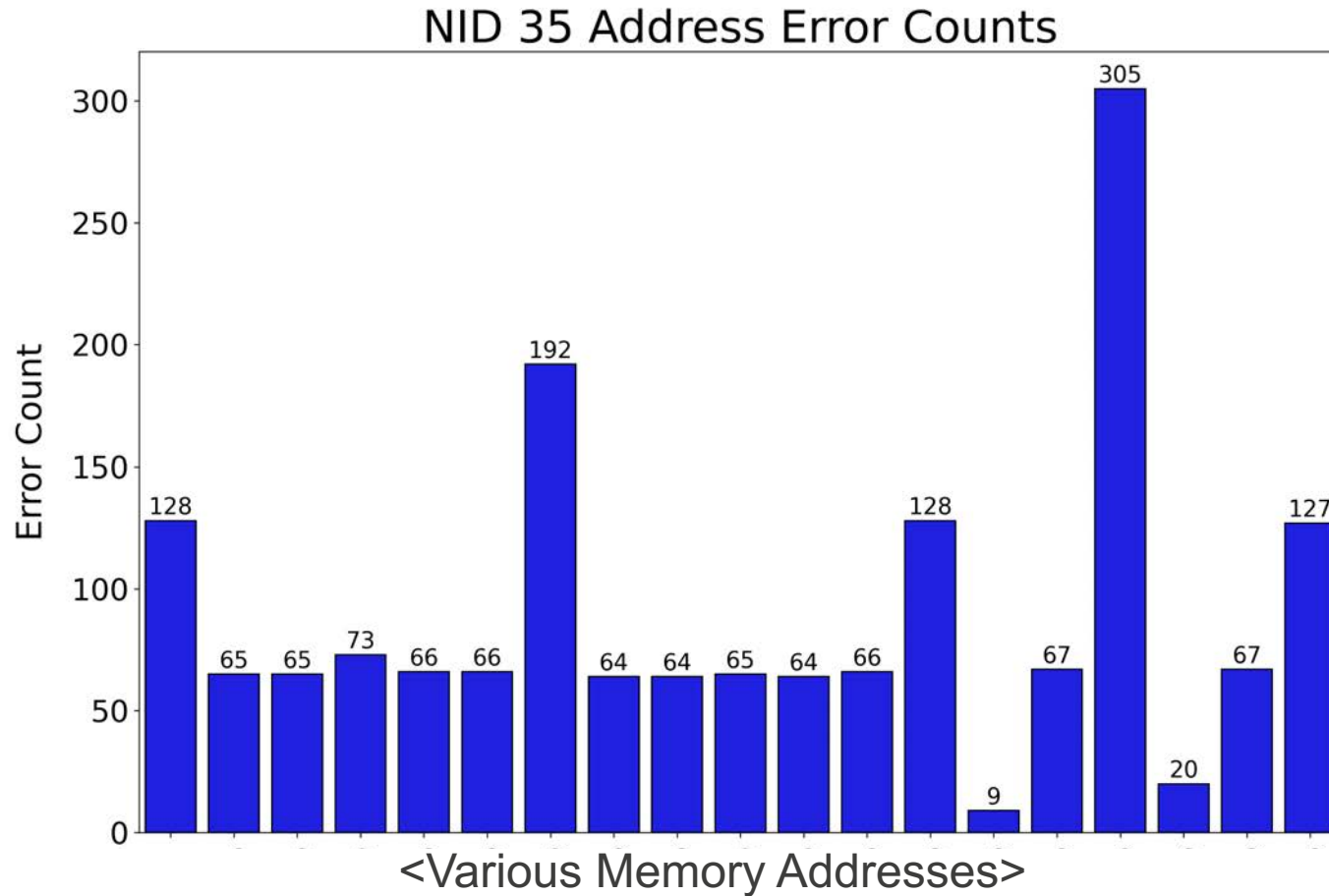
This details the workflow of taking memory error logs (e.g. xthwerilog) and performing analysis. Various datasets and configuration information are ingested to provide an enhanced dataset for analytics.



How many faults occurred on Trinitite?



Memory Decoding



Next Steps

- Statistically determine faults

Questions?