Hunting For Hardware Changes in Data Centres

Computing Facilities

Planning and Procurement

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CHEP 2012

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Hardware Failures

- CERN Data Centre:
  - ~10K servers, ~15K CPU, ~55K DIMMs, ~60K HDD, ~17K NICs
- To answer questions:
  - For how long should we burn-in servers?
  - Is there a systematic problem?
  - When should we stop running old servers?
- Hardware Failures
  - Actually, **replacements**
  - HDD MTTF 320,000 hrs (not 1.2 Mhrs)
  - What about annualized failure rate (AFR)?
    - By disk age? By server purchase order (server vintage)?

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To know more we needed…

- Not only to know what we have and track when it changes…
- … but also to track all components, their age, and to keep a detailed record of all the changes (serial, model, firmware, revision)
- We started storing the data on a couchdb instance

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CF Hardware Inventory

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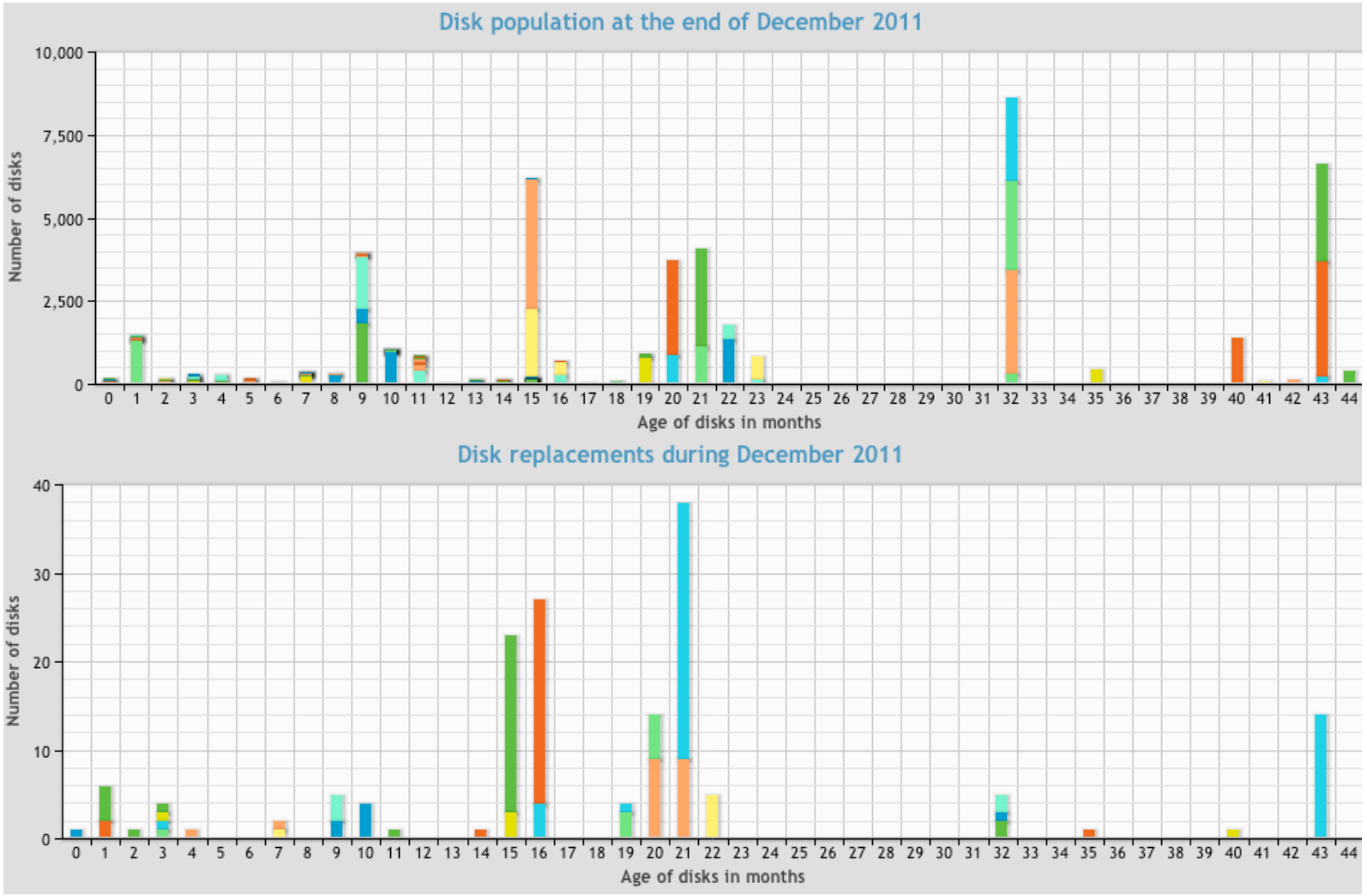
HDD example



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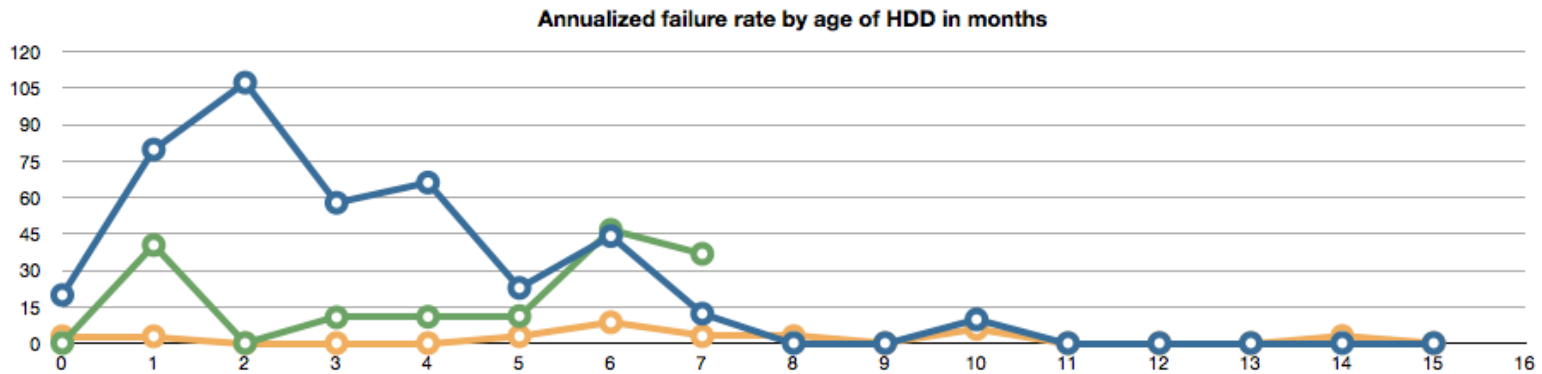
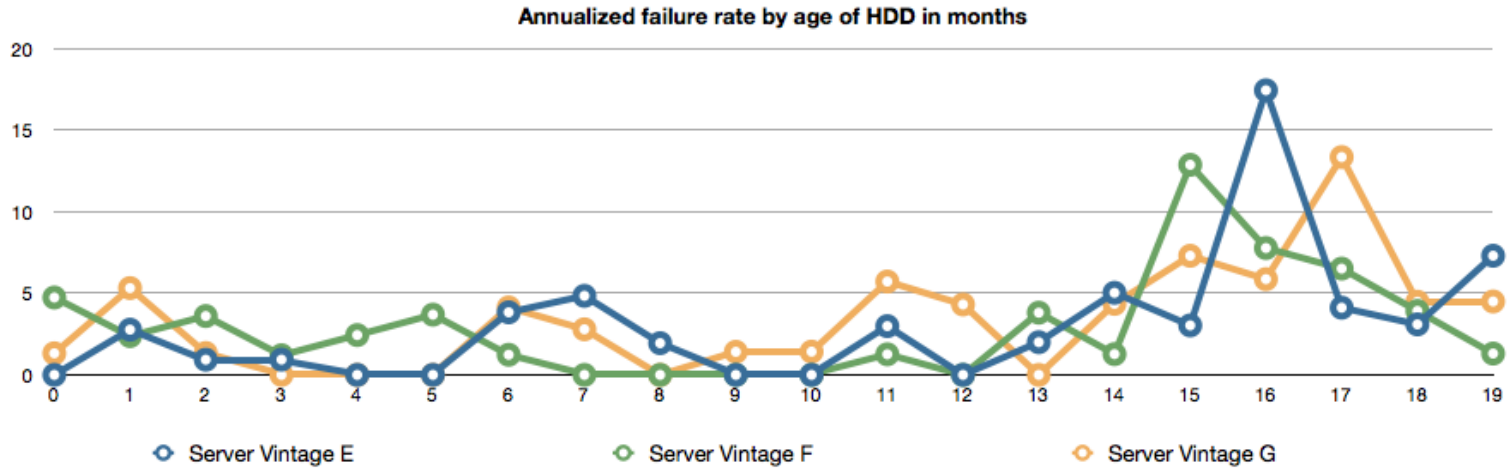
HDD example - AFR





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End

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