Haystack Status

Chet Ruszczyk

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MIT Haystack Observatory, Westford, MA

Projects

- Mark6 Status
- Operational Testing Status and Plans
  - Integration of Mark6 recorders with DiFX

Mark6 Status

- Software
  - dplane (data plane - r/w to disk modules)
    - Version 0.8 under test
    - Features:
      - Packet reordering / missing packets
      - More robust handling of failing / failed disks
      - Bug fixes
  - cplane (control plane - VSI-S interface)
    - Version 0.7 under test
    - Features:
      - Scan check capabilities
      - Better error checking of command parameters

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Mark6 Status

- Documentation
  - Updates to the use case documentation
    - Based on input from Bonn
  - Update to the documentation set
    - Clarification of a few commands
- Self test software
  - Initial version of stand alone self test software has been created and under test
    - Requires more user friendly control to be added
    - Not ready for release

Mark6 Status

- Hardware
  - New motherboards
    - Old motherboards reached end of life
  - 64G of RAM
  - CX4 or SFP+ 10G NIC cards
  - Haystack has 16 systems in house
    - 5 Alma Phasing Project (2 shipped to Chile)
    - 5 EHT Development
    - 6 Geodesy and development

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Mark6 Status

- Availability
  - Can be ordered from Conduant
    - $15,285 US for 16Gbps system
      - Mark6 Host : $9,895
      - Mark6 Expansion: $2,675
      - Cable Tray: $55
      - eSata disk cables: $85 each -> $680
      - Disk Modules: $495 each
  - Upgrade cost for Mark5
    - $7,588 for host
    - Plus misc items

- http://www.haystack.mit.edu/tech/vlbi/mark6/index.html

Operational Testing Status and Plans

- Software utilities have been created with user model for incorporating Mark6 with DiFX.
- Two models are being investigated
  - Expansion chassis for power only
    - Host being a system with comparable motherboard and appropriate PCI cards (non Conduant system)
  - Standard Mark6 system
    - Host and expansion chassis

Operational Testing Status and Plans

- Required software:
  - cplane - control plane
    - Disk management
  - gather
    - A high-speed *C* program to reassemble a single file from a scatter-gather file system
  - gator
    - Accesses Mark6 scatter-gather file sets, runs gather on them if necessary, and creates output file(s) on a destination fileserver (often RAID)
  - dqa - data quality analyzer program
    - Gives information about the file format, contents, data integrity and de-threads VDIF streams for processing

Operational Testing Status and Plans

- Ongoing end to end trial
  - Tagging along with R1's and R4's at Wf from standard IVS schedules (skd format)
    - Goals:
      - Evaluate / clarify the process of correlating data
      - Mark6 Stress testing
        - » Longer than VGOS scans (30 sec on / off)
  - Transfer disk modules to Haystack Correlator
    - Data is extracted using "gator" and "dqa"
    - Zero baseline fringes between RDBE's
      - Verification of RDBE firmware

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Operational Testing Status and Plans

- Four use cases under test:
  - Case 1: Mark5B formatted data (PFBG 1.4)
    - Success - Fringes between RDBE's
  - Case 2: Complex VDIF data (PFBG 3.0)
    - Success - fringes between all RDBE's
  - Case 3: Mixed mode testing (VDIF, M5B)
    - Two with PFBG Version 3.0 to Mark6
    - Two with PFBG Version 1.4 to Mark5C
    - Under investigation
  - Case 4: 16Gbps to two disks (VDIF)
    - Under evaluation

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Operational Plan

- Broadband Dev Westford to GGAO 12M
  - RDBE-H -> Mark6
- EHT session planned
  - RDBE-S -> Mark6
- Integration with the field system

Thank you / Questions?

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