

# CDF raw data logger upgrade project

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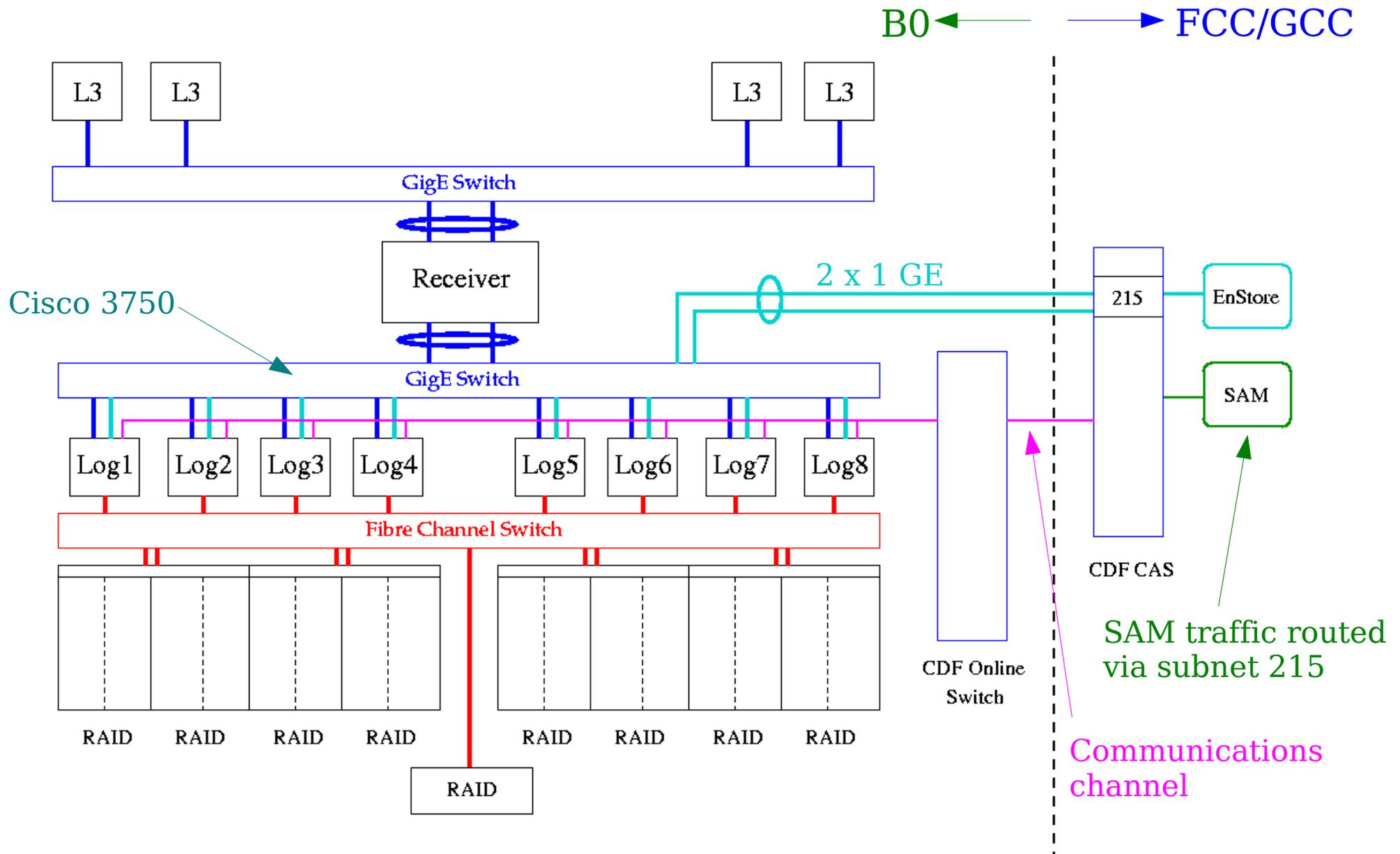
REX Department Meeting  
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# Raw data logger upgrade

- CDF upgrading the data logging capacity of the DAQ
  - Current peak Level 3 trigger rate is 40 MB/s
  - Upgrade goal is 100 MB/s sustained rate
- Goal of RDL upgrade project
  - Provide complete tape logging solution to keep pace with DAQ
    - Declare raw data files + metadata in SAM
    - Upgrade tape logging capacity
    - Provide sufficient network bandwidth from B0 to tape library
  - Tape logging rate specification
    - Sustained tape logging capacity = 160 MB/s
      - 20% increase for events that pass multiple L3 triggers
      - Additional capacity to catch up in the event of a backlog

# Overview

- Solution
  - Import the D0 tape logging system
    - Based upon SAM data handling system
    - Long record of stable operation
    - Unifies CDF and D0 tape logging infrastructure
  - Parallelize the logging system
    - 8 independent data streams from Level 3
    - Provide single data logger for each stream
  - Requires some development and testing
    - D0 logging rate is significantly lower than proposed CDF rate



B0 ← → FCC/GCC

Cisco 3750

2 x 1 GE

CDF CAS

SAM traffic routed via subnet 215

CDF Online Switch

Communications channel

RAID

RAID

RAID

RAID

RAID

RAID

RAID

RAID

RAID

EnStore

SAM

215

GigE Switch

Receiver

GigE Switch

Fibre Channel Switch

L3

L3

L3

L3

Log1

Log2

Log3

Log4

Log5

Log6

Log7

Log8

# Who

- REX
  - Dehong Zhang: SAM, infrastructure support
  - Krzysztof Genser: SAM support
  - Etta Burns: development platform support
- CCF
  - DCN group
  - ISA group
- CEPA
  - Jerry Guglielmo: principal developer
- CDF CSL upgrade and DH groups

# Status

- Networking
  - Installed dedicated 2 Gb link for data logger from B0 to FCC
- Logging software
  - Running on prototype online hardware
    - Identifies files to log, transfers them to tape, declares them to SAM, checks that everything worked, etc.
  - Ready for integration testing with DAQ logging software
- Tape drives/libraries
  - System will use new LTO-3 commodity tape drives in new library at GCC
  - Library delivery this week. Commissioning begins in June.