Virgo computing and storage needs for 2012

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2011 data taking & 2012 runs forecast

- In 2011: we took more data than ever: ~250 TB
  - 2 astrowatch periods (Jan -->May Sep-->Oct)
  - 1 science run : VSR4 in coinc with GEO (Jun -->Aug)
- From now on:
  - advanced Virgo installation + commissioning
  - 2 “software” engineering runs in 2012

Storage situation in CCs

- Data transfered:
  - Virgo : rawdata, h(t), 50 Hz, trend, RDS (Reduced Data Set)

    small fraction of the total.
  - LIGO data: H1 and L1 h(t)
  - During runs data are transfered with a very low latency for rawdata and h(t) files (< 1 day)
  - Virgo astrowatch data: between runs data are acquired. Virgo set to Science during nights and week-ends. Data are saved in case of an interesting external trigger.
- Data are stored in both computing centers (Bologna and Lyon) --> assure backup.
- Data are transfered using bbftppro (CNAF) and SRB (Lyon)

Data access / storage

Similar strategy: High Mass Storage

- Lyon:
  - all data are in HPSS. Access is granted through XrootD and SRB. Most recently accessed data are in XrootD cache disk. Solution is POSIX compliant and provide a good quality of service. We experienced difficulties this year to read data (staging too long). Solution provided by Lyon.
- Bologna:
  - We moved Virgo data in CASTOR into GEMSS.
  - All data transferred are automatically stored into GEMSS
    - gpfs_virgo4: 385 TB 90% full.
    - OK for VSR2: 165 TB VSR3: 95 TB, VSR4: 68 TB, S6: 5 TB

Virgo storage

- Lyon:

Year	HPSS (TiB)	XrootD cache (TiB) used / available for Virgo	SRB cache (TiB) used /available for all experiments	sps (TiB) used /available for Virgo
2010	497	162 / 184+124	32 / 203	3.6/ 5.4
Request for 2011	+ 200	0	0	0
2011 (oct 1st)	707	96 / 308	32 / 203	4 / 5.4

- Bologna:

Year	Gpfs 4 (TB) used / available for Virgo	Gpfs 3 (TB) used / available for Virgo	CASTOR (TB) used / available for Virgo
2010	261 / 384	9 / 16	?
Request for 2011	+0	+16	+430
2011 (oct 1st)	345 / 384	26 / 32	754

Virgo storage for 2012

- No new run in 2012: finish data transfer + few TB for software engineering runs
  - Lyon:
    - Few TB in HPSS
  - Bologna:
    - Few TB in GEMSS
    - +40 TB of user disk space (gpfs3). Pierpaolo Ricci wrote last monday this is technically not feasable, but proposed to use gpfs4 disk for users.

Virgo computing in 2011

Period	CNAF (HSE06.day)	CCIN2P3 (HSE06.day)
2011 request	434,000	114,000
2011 (oct 1 st)	695,000	141,000
2011 (forecast)	850,000	200,000

Computing in 2012

	CNAF/Bologna [HSE06.day]	IN2P3/Lyon [HSE06.day]
Continuous signals	400000	0
Burst sources	0	90000
Stochastic Background	0	0
Coalescing Binaries	30000	30000
Detector Characterization	4000	4000
Total	434000	124000

Demands for 2012: similar to 2011