

USQCD Activities

www.usqcd.org

www.lqcd.org/ildg

Update C. DeTar's + C. Watson's ILDG5 reports



Software status

- SciDAC software supports ILDG gauge file format
 - Read ILDG standard gauge files
 - Write ILDG standard files (+ extra SciDAC records)
- Layered modular design
 - QIO
 - File (open/close) and record (read/write etc.) methods
 - C-LIME
 - Lower level
 - Encapsulates data records
- Ready now: www.usqcd.org/usqcd-software/

Lattice generation plans

- Asqtad $N_f = 2+1$ MILC (UKQCD coordination)
 - $a = 0.09$ fm
 - $m_l / m_s = 0.1$
 - $40^3 \times 96$
 - NERSC archive: $m_l / m_s = 0.2$ and 0.4 publicly available
 - $a = 0.06$ fm
 - $m_l / m_s = 0.2$ and 0.4
 - $48^3 \times 144$

Release to ILDG O(6mos) after hep-lat publication

NERSC archive: qcd.nersc.gov/

Lattice generation plans

- DWF $N_f = 2+1$ LHPC (UKQCD coordination)
 - Tentative, needs exploration
 - $a = \text{tbd}$
 - $m_\pi = 350 \text{ MeV}$
 - $24^3 \times 64$

ILDG availability under discussion

Lattice generation plans

- DWF $N_f = 2+1$ RBC (UKQCD coordination)
 - $a = 1.1$ fm
 - $m_1 \geq 0.2 m_s$
 - $24^3 \times 64$
- P4 staggered $N_f = 2+1$ RBC (Bielefeld coordination)
 - m_1 “small”
 - $N_t = 4, 6$ N_s varies

Release to ILDG O(6mos) after hep-lat publication

Middleware status

- Prototype metadata catalog @ FNAL
 - FNAL 1st prototype SQL based will replace with XML db
- Prototype replica catalog @ JLab
- Storage Resource Manager (SRM)
 - stage, volatile, durable, permanent, get, put, permissions etc.
 - Dcache storage @ FNAL SRM v1.1 moving to v2.1.
 - Tape storage @ Jlab SRM v2.x

Bandwidth / File transfer tests



On-demand provisioning of high-performance network pathways for scientific dataflows.

DOE FNAL CalTech www.lambdastation.org/

Test transfers between DESY (LatFor) dCache and FNAL dCache. Contact: Michael Ernst, DESY

- Memory-to-memory (iperf) 55 MB/sec peak
- 24 Hr disk-to-disk 19 MB/sec (1.6 TB/day)
- FNAL Dark fiber ESN Net DANTE DFN DESY Hamburg
- Identify bottlenecks
- Test drive with LatFor data grid tools

What's needed (operational June 2006)

- Write (new) lattices in ILDG format + markup metadata
- Deploy metadata catalogs @ BNL, FNAL and Jlab
- Deploy replica catalogs: map GFN data replica
- SRM file transfers
- Command tools usable in scripting languages
- Web / gui interfaces ...professional look
- An interested group of developers / implementors
- Volunteer your skills and time!