

SciDAC Software Infrastructure for Lattice Gauge Theory

Richard C. Brower

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<http://www.lqcd.org/scidac>

Participants in Software Project

Arizona	Doug Toussaint		FNAL	Amitoj Sing
Arizona	Eric Gregory		Illinois	Celso Mendes *
BU	Rich Brower	*	Illinois	Daniel Reed
BU	Hartmut Neff		JLab	Robert Edwards *
BNL	Chulwoo Jung		JLab	Chip Watson *
BNL	Chris Miller		JLab	Jie Chen
BNL	Kostantin Petrov		JLab	Walt Akers
Columbia	Bob Mawhinney	*	MIT	Andrew Pochinsky
FNAL	Don Holmgren	*	Utah	Carleton DeTar *
FNAL	Jim Simone		Utah	James Osborn
FNAL	Eric Nielsen			

(UK Peter Boyle & Balint Joo)

* Software Coordinating Committee

SciDAC Software Structure

Optimised for P4 and QCDOC

Level 3

Optimised Dirac Operators,
Inverters

Level 2

QDP (QCD Data Parallel)

Lattice Wide Operations,
Data shifts

QIO
Binary Data
Files/XML
Metadata

QLA (QCD Linear Algebra)

Level 1

QMP (QCD Message Passing)

Exists in C/C++

Exists in C/C++, implemented over MPI, QCDOC,
M-VIA for gigE

Critical Tasks for Next Six Months

- Nail down QMP Standard on QCDOC
 - **New QMP document release soon**
- Interface to Level 3 Inverters/Asqtad Force
 - **Asqtad 40% peak on QCDOC, DW on P4 ' 1.5Gigaflops**
- Opt: MILC/QDP , Chroma/QDP++ , CPS
 - **Uniform SAXPY/DAXPY library (BEGEL?)**
- Uniform Queuing/Scripting/File Management
 - **Front end host hide evolving backend (lower cost)**