FY14 Acquisition Planning Process Document

SC Lattice QCD Computing Project Extension (LQCD-ext)

Unique Project (Investment) Identifier: 019-20-01-21-02-1032-00

Operated at
Brookhaven National Laboratory
Fermi National Accelerator Laboratory
Thomas Jefferson National Accelerator Facility

for the
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Office of Science
Offices of High Energy and Nuclear Physics

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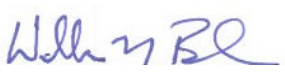
April 23, 2013

CONCURRENCES:



Apr 23, 2013

William Boroski
LQCD Contractor Project Manager

Date

LQCD-ext WBS
Change Log

Revision No.	Description / Pages Affected	Effective Date
0.0	Entire document.	March 22, 2012
1.0	Update for FY14	April 23, 2013

LQCD-Ext FY14 Acquisition Planning Process

23-Apr-2013

Step	Description	Target Due Date
1	The LQCD-Ext Computing Project team (i.e., "the Project") will provide the LQCD Executive Committee (EC) with data summarizing the distributions of job types and sizes during the prior year on the hardware operated by the Project (Infiniband and GPU-accelerated clusters). The Project will request that the EC provide the anticipated scientific program requirements for various architectures (i.e., leadership-class machines, BG/Q rack or Infiniband cluster, and GPU-accelerated cluster). Information on USQCD hardware usage will be presented to the collaboration at the 2013 All-Hands Meeting April 19-20.	Mar 26
2	The Project will prepare the FY14 Acquisition Strategy document for presentation and review at the FY2013 DOE Annual Progress Review. The Acquisition Strategy will outline the various options under consideration and the proposed process for selecting the mix of computing hardware that will be procured and deployed in FY13 using project funds.	May 9-10
3	The Project will request that the BNL site manager prepare a plan for procuring and operating a BG/Q half-rack, detailing estimating hardware, storage, deployment, and operations costs.	Jun 3
4	The EC, with input from the Scientific Program Committee (SPC), will provide the Project with the anticipated scientific program requirements for various architectures (i.e., leadership-class machines, BG/Q or Infiniband cluster, and GPU or MIC-accelerated cluster). A helpful way of conveying this information would be for the EC to provide an estimate of the relative fractions of "analysis core-hours" and "cost-equivalent GPU-hours" needed to support the scientific program over the next 1 to 2 years. Ideally, the EC will provide the Project with anticipated needs on a per year basis for FY14 and FY15.	Jun 17
5	The BNL site manager will provide the Project with a preliminary plan for procuring and operating a BG/Q half-rack extension to the existing (FY13) BG/Q half-rack, including estimated costs and schedule.	Jul 1
6	The BNL site manager will provide the Project with a final plan for procuring and operating a BG/Q half-rack extension to the existing (FY13) BG/Q half-rack, including costs (hardware, storage, costed manpower for deployment and operations) and schedule.	Jul 22
7	The Project will review the technical landscape, conduct an alternatives analysis of the various options, and propose a cost-effective solution for the FY14 hardware deployment. When considering viable options, the Project will need to factor in the total cost of ownership (TCO) for each solution. In addition to hardware and deployment costs, TCO also includes on-going operations and support costs. Hardware costs will include any necessary storage acquisitions. For solutions involving Infiniband clusters and GPU-accelerated clusters, an operations cost model already exists. For a BG/Q option, the Project will need to understand the cost model for operating BG/Q hardware at BNL. Information on the cost of a BG/Q half-rack extension to the existing (FY13) BG/Q half-rack will also be needed. Results of the analysis and an overview of the proposed solution will be summarized in the Alternatives Analysis document. The Project will verify the host laboratory's ability and willingness to provide the necessary space, power, and cooling for each alternative.	Jul 29
8	The EC will review the Alternatives Analysis document and proposed FY14 hardware solution, and will provide advice on how to proceed to the Project Manager.	Aug 12
9	The Project will analyze the advice of the Executive Committee as well as any new data that might have been obtained, and will produce the final plan for the FY14 hardware deployment. The Project Manager will advise the EC, the host laboratories, the Federal Project Director, and Project Monitor of the planned FY14 hardware acquisition.	Aug 15

10	The Project Manager will revise the project budget as necessary to accommodate the FY14 hardware solution. Depending on the alternative selected, changes may be required in the planned allocation of funds across the three host laboratories.	Aug 20
11	The Project Manager will provide the Federal Project Director with the FY14 Financial Plan, containing the requested distribution of project funds to the three host laboratories.	Aug 20 (est.)
12	The Project will develop a detailed acquisition plan, with timeline, based on the approved FY14 architecture solution.	Sep 30,2013
13	The Project will execute the FY14 acquisition plan in a manner that meets approved performance goals and milestones.	Sep 30, 2014