**JPL has established an initiative to reduce the number of physical servers and storage devices that are brought into the Laboratory. Power, cooling, security, and facilities space are among the concerns and there are new opportunities available with virtualization and the cloud technologies which may be advantageous to organizations requiring new processing capabilities. This form is intended to be used to request an exemption from using OCIO Server and/or Storage services.**

**Instructions:**

Provide information requested below, and then submit this completed form with the JPL Purchase Requisition. Use a separate request for each system.

**Section A – Identifying Information**

**Name:** Lei Pan

**Phone:** (818) 219-1409

**Org:** 388C

**M/S:** 168-200

**---------------------------------------------------------------------------------------------------------------------**

**Section B – Equipment Information & Description of User/Service**

1) Describe the System (server, storage, operating system, etc.):

|  |
| --- |
| **2xHigh performance Linux compute nodes (each having 64GB memory and 12 cores)**  **1xHigh performance Linux file server and RAID of 100TB usable space**  **1xFiber optic Host Bus Adapter for connection between server and storage**  **1x24 port Gigabit Rackmount Switch for connection among compute nodes** |

2) What is the intended use of the system?

|  |
| --- |
| **The equipment will be used to support the activities of the NASA funded research and development project “Computational Modeling Algorithms and Cyber-infrastructure” (CMAC). The new equipment is required for their high performance and storage density to meet the processing needs of the CMAC web services & distributed parallel computing. In addition, the equipment consumes significantly less power and floor space than earlier technology, putting lower requirements on our facility infrastructure.** |

3) Will this system be connected to either JPLNet or the Mission Network? Yes No

If yes, which one)? JPLNet

4) What is the life expectancy of the application/use? 4-5 years

5) Will this replace existing hardware (there may be energy rebates available)? Yes No

6) Where will the equipment be located (if on Lab, what room number)? Building 168 Room 235

Does power and proper AC currently exist? Yes No

If the server/storage is going into the Bldg. 600 Data Center has it been coordinated with Paul Ottenfeld? Yes No

7) If a physical server or storage, why couldn’t institutional services (e.g., VM's, cloud, bulk storage) be used?

|  |
| --- |
| **The computing equipment will support high demand, high throughput, and low latency computing web applications that run for weeks without interruption. Typically, there will be hundreds of concurrent processes running on the compute nodes which will be performing intense accesses to the storage system. The storage system requires a optical fiber and Gigabit network interface in order to support the bandwidth demands of the compute nodes. Trying to support this function through the institutional storage systems will severely reduce the throughput of the applications, and therefore increase their completion times. This is a R&TD project that involves using many open-source software packages including those for python, earth science data, web services, and high performance numerical computing. Persistent testing with different software and hardware configurations is expected for this project, which constitutes a need for dedicated computing equipment.** |

**As the cognizant SA for this proposed system I understand that if this system will connect to the JPL Network (JPLNet or Mission Network) I am responsible for implementing OS and Application Specific Security Protective Measures, keeping current with software updates related to IT Security, and installing BigFix on the system either through a SCE, SAM, AOE, or BFF security subscription (see** [**http://jplitx.jpl.nasa.gov/subscriptions/**](http://jplitx.jpl.nasa.gov/subscriptions/) **for more information) as applicable.**

Date: 12/12/2012 Signature:

Printed name: Lei Pan