



INSTRUCTIONAL EQUIPMENT REQUEST

Due in Dean/Unit Head's Office on September 19, 2011 (FALL) and March 1, 2011 (SPRING)

The Definition of Instructional Equipment can be found in the California Community College's Budget and Accounting Manual. A copy of these definitions is on the PBC webpage: http://grapevine/pbc/InstructionalEquipment.php

Name of Requestor: John Gonder

Division/Unit : BCATTS / Computer Networking Technology

Brief title of request (equipment or materials being requested must be similar, related or part of a system. Netlab VM LPC/Chabot project

Request amount (unit cost and total cost including tax and shipping. Please include all costs including installation, modification to existing facilities to accomodate new equipment, etc.): This should come from the vendor quote

Table with 2 columns: Item (s) cost, Amount. Rows include Tax (.00875), Shipping, Installation, Facilities Modification, Other, and Total Cost (\$38601.38).

Attach copy of quote(s), estimate(s) and requisition(s): (Must attach quote & requisition; absence of either will delay processing)

Brief description of specific equipment or materials requested and what they will be used for: (include the # pieces being requested; i.e.: 10 crayola crayons, sky blue, etc. in 250 words or less)

This cooperative cross-district project will jointly operate equipment purchased by each college to provide labs for a broad array of CNT, CS, ESYS and other classes. It is made possible by training provided to Chabot and LPC faculty by the NSF funded MPICT consortium over the last two years, and LPC/Chabot membership in the VMware and Citrix Academy programs, which provides all the virtualization software for classroom and student use free, as well as instructor training and support. Students access a virtual computer optimized for their class, and which they can use for unlimited homework, lab, and skills practice - equivalent to 100 computer systems - virtually, 24-7-365 to students on and off campus. LPC half of the project is: 2 NetLab VMware image control systems 4 Dell servers

Is this in your Program Review? Yes [checked] No []

The constantly changing technology taught in these areas requires both continually updated and newly created classes to accomplish our state mandated training mission and that of the college, as well as current, full strength equipment to support today's applications and the high level of access and flexibility demanded by students and the curriculum for face to face, online and hybrid classes.

This will provide 24-7-365 computer images to students on and off campus. The configuration of the systems can be changed at a moments notice to support student reservations from a broad range of F2F, online, and hybrid classes on both campuses.

Is it a replacement? Yes

Upgrade? Yes

New technology? Yes

Please explain?

Over the last 2 years LPC and Chabot faculty have trained in VMware use and management. An LPC proof of concept project proved the viability and usefulness of going fullscale, cross-district. The Dell servers and NetLab package are an upgrade to the proof of concept system, supporting flexible online access for the equivalent of 100 computer custom lab systems.

The NetLab front end represents the most modern way of managing face to face, online, and hybrid access to a flexible array of both virtual and physical equipment (servers, routers, virtual machines) that leverages a modest amount of devices to serve, 24-7-365, a wide range of class and curriculum needs economically and efficiently.

Serving computers virtually allows many more students in more classes to be served with far fewer copies of expensive specialized software or pieces of test equipment, using far fewer resources, and needing much less configuration, administration and IT and faculty time. e.g. 10 copies of a Forensic Toolkit software suite is fully adequate for 35 students in a Forensics class when served virtually - similar to loading 10 computers in 803 with special software, but this is available 24-7-365 anywhere. Or - 5 stations of electronics test equipment at Chabot can serve both a full class of ESYS students, and LPC classes wanting access to gear that is physically at Chabot.

Chabot has already set aside funding for their portion.

Following is the evaluation criteria; please see corresponding Instructional Equipment Rubric:

Instructional and Service Impact

How will this item have a positive impact on instruction and/or teaching and learning in the classroom? Is this for use by the instructor or students, or both?

This project provides virtualization - virtual machines - to take the place of physical computers, at lower cost, with lower energy use, less maintenance and configuration, in a way that allows the effect of completely changing the type, operating system and set of applications in a physical or virtual classroom instantly, and by schedule.

Whereas, now, endless labor is required to accomplish a part of the task of providing flexible systems for multiple class requirements, this can now be set up once, for one system, and cloned instantly as many times as required. The system provides scheduled access with student appointments supporting 24-7-365 learning, and instant changover from one hour to the next for a 'fresh' set of computers and applications.

This is the current state of computer instruction - cheaper, quicker, more dependable, more resilient, with a smaller energy footprint. Additionally, physical equipment - test equipment, servers, etc - at each campus can be made available to classes at both campuses - effectively doubling the equipment available to both colleges.

Having a VM, virtual machine, for each student means they can pause and resume their work anytime, anywhere - unlike using a physical machine in a lab. Any change they make affects only their own VM. If they completely blow it up, it's just an image, and can be re-cloned for them instantly at zero cost in time or money for IT or faculty.

Impact on Enrollment

Will the equipment impact enrollment, attract or increase the number of students participating in a course or program?

The CIS, CS and CNT programs are constantly updating to provide what students need today - not 12 or 18 months ago. The systems on which the curriculum depends must also provide what they need today. The ability to leverage equipment at both campuses will provide better access for classes at both colleges.

Virtual environments are quickly becoming the standard for online labs, and for providing flexibility for all types of classes. LPC and Chabot are on the leading edge in providing today's teaching for today's technology. Students recognize this and respond.

The ability to pause and resume work, to recover from mistakes, to practice at their own pace and learn in their own way is an important selling point for modern technology classes.

Access

How does this item promote the principles of universal design, by providing opportunities for under-represented populations & accommodate students with diverse learning styles?

The flexibility in being able to provide a virtually unlimited variation in system images means that much more individual customization is possible. Very importantly, the ability of students to access, at any time, a system configured exactly the way it was in class, and to pause and continue work easily at the time they find most convenient provides better learning outcomes. They can work, make mistakes, easily recover, and do work over as many times as they like, at their own pace. There is no need to drive to campus or be here when a computer lab is open. This is learning in the 21st century.

Outcomes

How will this equipment enable or enhance SLOs? What are the consequences related to learning outcomes if request is not funded?

The Netlab system logs all work, providing the ability to easily track usage, student problems and student work. This will enhance the ability to develop and implement SLOs in a traditionally difficult area - technology.

This virtualization technology is how modern schools are economically expanding and maximizing the impact of technology for student success. Not moving forward means we are giving up the lead to our competitors, and not fulfilling our mission to teach what students need to know today.

Total Cost of Ownership (This is an attempt to identify what the ongoing costs of purchasing this equipment will be to the institution)

- a) **What is the lifespan of the equipment? 5 years? 10 years? 20 years?**
- b) **Is there sufficient current/planned space available for the storage and use of this equipment? If so, where will it be housed? If not, is there a proposed location and are there any costs associated with installation or modifications to the space?**
- c) **Are there operating costs and how will they be covered by the department?**
- d) **What will be required to maintain the equipment, such as regular servicing or upkeep? Who will perform maintenance, and what will the estimated costs be?**

The lifespan is a minimum of 5 years.

There is sufficient current space - it will fit in the space used by replaced items in the CNT classrooms. No significant modifications required.

Ongoing software maintenance will be covered with VATEA.

Visibility/Profile within Community

Is this a “flagship” item that will bring recognition/notoriety to the College or raise the stature of the program? Will it attract students and/or enhance the image of the College in the community because of its rare, one-of-a-kind status?

This is the kind of system that will be the minimum standard for programs like ours. It provides us with the ability to say we are definitely putting in place the kind of modern technology we purport to teach.

Commitment to Sustainability

How does this equipment exceed basic sustainability goals and encourage renewable resources at the College? Is the design/operation of this item in keeping with the College's commitment to sustainable practices?

The equipment provides virtualization for the energy equivalent of 3 entire classrooms of computers. Working from any location minimizes commuting, making efficient use of time and energy.

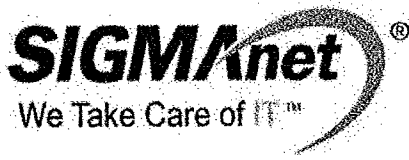
Health, Safety & Security

Does this equipment address any health, safety & security concerns? If so, please explain below.

Signatures (required)

(If requesting computer-related equipment/software, LPC IT Department Review is required.)

Requested by _____	Dean/ Unit Head _____	IT Department Signature _____
LPC VP Business/President _____	3-6-12	Vice President _____ 3/21/12
LPC Business Office Use (Account Number) _____		



Date: 9/19/2011

QUOTATION

Quote: 5085560

To: John Gonder
 Las Positas Community College
 3033 COLLIER CANYON RD
 LIVERMORE CA, 94551
 Tel: 925-373-5886 Fax: 925-443-0742

From: Arin Haddow
 SIGMAnet
 4290 E. Brickell St.
 Ontario, CA 91761
 Tel: Fax: 909-937-9125

Comments:

Part Number	Manufacturer	Description	Qty	Unit Price	Amount
1	NETLAB-CCNX	NETLAB NetLab Server Bundle -1U server appliance - 1 year full warranty (parts and labor) - NETLAB Academy Edition software -MySQL License -Software installation, configuration, and testing -1st year software maintenance and support (required annually)	1	6995.00	6995.00 2
2	131700	MBX SYSTEMS NETLAB+ Appliance	1	0.00	0.00
3	NDG-CAS-11-A	SIGMAnet Netlab - MBX NETLAB+ 1402 Appliance - RAID and Software Load US Operations.	1	0.00	0.00
4	NDG-NEWSYS-AE	NDG Software and 1st year support	1	0.00	0.00

Minimize your Capital Expenditures. Ask about our Leasing Programs.

Sub-Total \$6,995.00
 Sales Tax \$612.06
 Shipping \$50.00

Total \$7,657.06

Quotation is valid for 30 Days.
 All prices are F.O.B. Destination, Freight Prepaid & Add.
 Please feel free to call me if you have any further questions. Thank You.

*requesting 2 @
 above price*



NETLAB Academy Edition™ Case Study

University of Hawaii – Honolulu Community College
Pacific Center for Advanced Technology Training



"We [the Pacific Center for Advanced Technology Training (PCATT)] take pride in our relationship with the Hawaii public and private schools serving as Cisco Networking Academies®. We have articulation agreements in place awarding college credits for students coming to Honolulu Community College who have completed CCNA 2 or CCNA 4 of the CCNA® curriculum. We provide free NETLAB Academy Edition™ access to Networking Academies in our CATC umbrella; significantly, the Hawaii Department of Education enjoys the use of NETLAB as a means of providing extended hands-on practice with CCNA labs. Many Local and Regional Academies in Hawaii and Pacific Island nations that we serve have limited funding for Cisco® equipment bundles, so our donation of NETLAB time to these Academies makes an important contribution to the students and instructors at these sites."

Wayne Lewis - PCATT/HCC Lead Instructor

Q: Why did you buy your NETLAB Academy Edition™ system?

A: We bought it because we believe in distance education as a means of improving student achievement. Also, we wanted to extend lab access for HCC students and Hawaii public school students to 24 x 7.

Q: How are Academies utilizing your NETLAB system?

A: Public high school students in Hawaii are the primary users of our NETLAB rack. Following that group would be students in private schools and our HCC students. The students use NETLAB to do labs that they may not have finished while in class. Instructors often use NETLAB to demonstrate concepts to students or to aid students while they are in the process of completing labs.

Q: Do you find that after hour and weekend access to NETLAB is cost beneficial?

A: Once NETLAB was set up, it had zero down time so far. It requires zero maintenance once it is set up. The greatest time consumer related to NETLAB is creating accounts and training instructors. For instructors, time must be devoted to creating classes, adding students, and scheduling time for student usage.

Q: Was the NETLAB system easy to install?

A: Very straightforward due to the excellent documentation. We had a second-year Computing, Electronics, and Networking Technology (CENT) student setup the entire NETLAB solution from scratch in a period of a few days with almost zero supervision.

Q: How easy or difficult is it to maintain your NETLAB system?

A: The documentation for NETLAB is the best I've seen in all my years of working in IT education. It is extremely well organized and easy to follow. The support that we have received from the NETLAB support staff has been exemplary and was typically only needed as a result of user error.

Notably, our Version 2.1.4 NETLAB setup (now converted to Version 3.0) was entirely set up by one of our second-year HCC students as part of his internship for the Computing, Electronics, and Networking Technology (CENT) program. He had very little networking background, but was able to set up the entire rack with next to zero supervision, just by following the online administrator and installation documentation accompanying the NETLAB product.



To learn more about NETLAB visit www.netdevgroup.com.

Q: Describe your experiences with the NETLAB support staff. Have you been pleased with the support you have received?

A: Our network technician staff at PCATT worked with a NETLAB support engineer at length in troubleshooting the issues with our NETLAB Version 3.0 basic router and basic switch pod setup. An NDG support engineer often worked after normal support hours to accommodate us in Hawaii with our six-hour time difference. It turned out that the problems we had were all due to some mix-ups on our end, but in any case the support staff was patient over a one-week period as we set up the NETLAB rack.

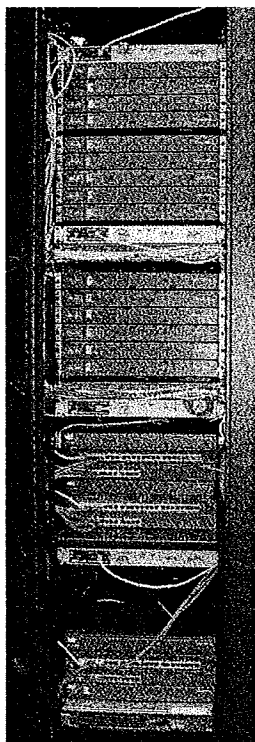
What are instructors saying about NETLAB Academy Edition™? Is NETLAB improving the classroom or demonstration environment?

"Having access to the online NETLAB routers and switches is great for me and my students. It allows us to do labs on real equipment remotely so we can work on our skills from home as well as from school. NETLAB also gives me the option to experiment and create my own labs to challenge my more advanced students."

Jack Little, Hawaii Academy of Arts and Science

"NetLab is an amazing tool for both students and instructors. Since NETLAB remotely connects you to the console port of real equipment, it has the same look and feel of physically being onsite with the routers and switches. NetLab also makes it extremely easy to view multiple console sessions simultaneously - something very difficult to accomplish when configuring multiple routers using only one PC."

Ryan de la Pena, Kauai Community College



PCATT NETLAB Setup

"I enjoy using NETLAB. I found it to be extremely easy to navigate. The web interface was very well designed, I often schedule time during my current classes to show students new material or to reinforce important concepts. The high availability of the NETLAB site has given me a virtual lab of my own any time day or night."

Bruce A. Mirante, Heald College

"NETLAB became an integral part of my day to day lab work with the students. Students could get hands on time on the router while interacting and troubleshooting with other students. The fact that they could save their last working configuration was a real plus in keeping continuity to their learning."

Richard Mills, Kamehameha Schools

"I like the NETLAB idea because it provides schools with limited resources to purchase a set of routers to have access to equipment that is probably better than what schools can afford. It also eliminates the additional cost needed by schools to maintain or troubleshoot their own equipment."

Carl Ota, Waipahu High School

"In class, I often discuss labs with the students before they do them. An emphasis is placed on the logical flow and structure of the lab. NETLAB is a great aid in this discussion. During the process of configuration, we discuss what information we would like to get and the corresponding commands to obtain this information. We use NETLAB to get instant feedback on our thoughts."

James Yee, University of Hawaii



To learn more about NETLAB visit www.netdevgroup.com.



Date: 9/19/2011

QUOTATION

Quote: 5085566

To: John Gonder
 Las Positas Community College
 3033 COLLIER CANYON RD
 LIVERMORE CA, 94551
 Tel: 925-373-5886 Fax: 925-443-0742

From: Arin Haddow
 SIGMAnet
 4290 E. Brickell St.
 Ontario, CA 91761
 Tel: Fax: 909-937-9125

Comments:

Part Number	Manufacturer	Description	Qty	Unit Price	Amount
1	DELL COMPUTER	<ul style="list-style-type: none"> • Base Unit: PE R710 with Chassis for Up to 6, 3.5-Inch Hard Drives (224-8462) • Processor: PowerEdge R710 Shipping (330-4124) • Memory: 16GB Memory (4x4GB), 1333MHz Dual Ranked RDIMMs for 1 Proc, Advanced ECC (317-7306) • Embedded Broadcom, GB Ethernet NICS with TOE and iSCSI Offload Enabled (430-2970) • Embedded Broadcom, GB Ethernet NICS with TOE (430-1764) • E5530 Xeon Processor, 2.4GHz 8M Cache, Turbo, HT, 1066MHz Max Mem (317-1205) • PowerEdge R710 Heat Sink for 1Processor (317-1224) • Hard Drive: 500GB 7.2K RPM Near-Line SAS 6Gbps 3.5in Hotplug Hard Drive (342-2096) • Hard Drive Controller: PERC H700 Integrated RAID Controller, 512MB Cache, x6 (342-0649) • Power Saving BIOS Setting (330-3491) • No Operating System (420-6320) • NIC: Broadcom 5709 Dual Port 1GbE NIC w/TOE iSCSI, PCIe-4 (430-3260) • Modem: iDRAC6 Enterprise (467-8648) • CD-ROM or DVD-ROM Drive: DVD ROM, SATA, INTERNAL (313-9092) • Riser with 2 PCIe x8 + 2 PCIe x4 Slot (320-7886) • Documentation Diskette: Dell Management Console (330-5280) • Documentation Diskette: Electronic System Documentation and OpenManage DVD Kit (330-3485) • Additional Storage Products: 500GB 7.2K RPM Near-Line SAS 6Gbps 3.5in Hotplug Hard Drive (342-2096) • RAID 1 for H700, PERC 6/i, H200 or SAS 6/iR Controllers (341-8699) • 2/4-Post Static Rails (330-3488) 	1	5355.00	5355.00

- Service: Dell Hardware Limited
Warranty Extended Year (993-8458)
- Service: Dell Hardware Limited
Warranty Plus On Site Service Initial
Year (993-8447)
- Service: Non-Mission Critical: 4-Hour
7x24 On-site Service After Problem
Diagnosis, 2 Year Extended (992-
8122)

- Service:
- Non-Mission Critical: 4-Hour 7x24
On-site Service After Problem
Diagnosis, Initial Year (993-2160)

- Service: ProSupport : 7x24 HW /
SW Tech Support and Assistance , 3
Year (992-8322)
- Misc: High Output Power Supply
Redundant, 870W (330-3475)
- Misc: Power Cord, NEMA 5-15P to
C13, 15 amp, wall plug, 10 feet / 3
meter (310-8509)
- Misc: Power Cord, NEMA 5-15P to
C13, 15 amp, wall plug, 10 feet / 3
meter (310-8509)

Minimize your Capital Expenditures. Ask about our Leasing Programs.

Sub-Total	\$5,355.00
Sales Tax	\$468.56
Shipping	\$20.00

Total	\$5,843.56
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Quotation is valid for 30 Days.

All prices are F.O.B. Destination, Freight Prepaid & Add.

Please feel free to call me if you have any further questions. Thank You.

*requesting 4 @
above price.*