

**MOORPARK CITY COUNCIL
AGENDA REPORT**

TO: Honorable City Council

FROM: Deborah S. Traffenstedt, Administrative Services Director *DST*
PREPARED BY: Melody Johnston, Information Systems Manager *mj*

DATE: February 25, 2008 (CC Meeting of 3/05/08)

SUBJECT: Consider Adoption of Resolution Amending Fiscal Year 2007/08 Budget to Achieve Virtual Computer Network

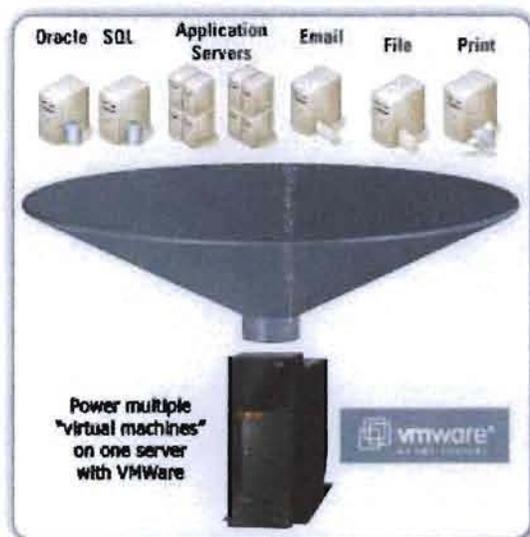
BACKGROUND

In the Fiscal Year 2007/08 budget, the City Council approved funding to cover the cost of several upgrades to the City's computer network system that would allow for increased storage and faster data access time. The intent was to purchase an Active Directory Domain Controller and a Network Attached Storage (NAS) device. The Domain Controller plays the part of the main server, responding to requests for logging into the network, checking the permissions of the users, etc. The NAS provides management of data storage and data access.

After reconsidering the City's needs, and the current technology, it is now apparent that taking the network in the direction of virtualization is the better decision.

DISCUSSION

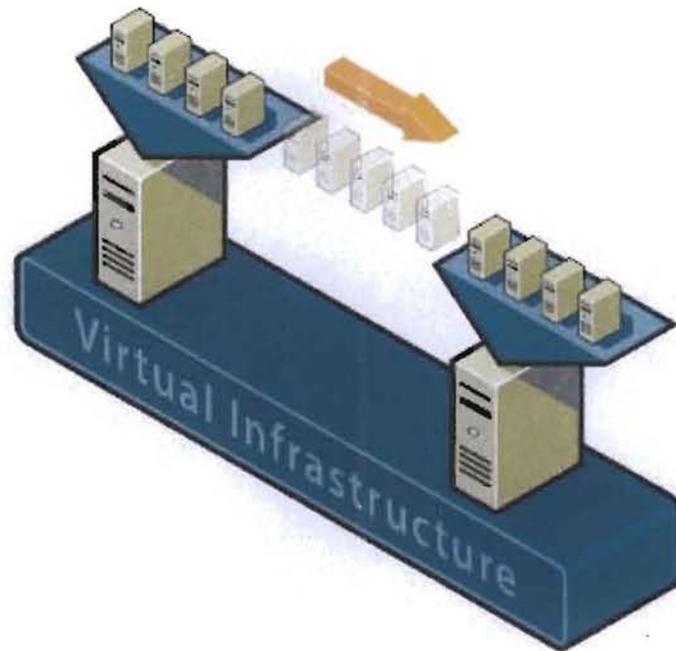
Virtualization essentially lets one computer do the job of multiple computers, by sharing the resources of a single computer across multiple environments. Virtual servers allow the hosting of multiple applications locally and in remote locations, minimizing physical and geographical limitations. In addition to energy savings and lower capital expenses, due to more efficient use of hardware resources, a virtual infrastructure can achieve high availability of resources, better desktop management, increased security, and improved disaster recovery processes. The following exhibit illustrates what the virtualization infrastructure can achieve.



Traditional disaster recovery plans require many manual, complex steps to allocate recovery resources, perform bare metal recovery, perform data recovery, and validate that systems are ready for use. Virtualization turns everything about a system—hardware configuration, firmware, operating system install, application install—into data stored in just a few files on disk. Protecting a complete system is just a matter of protecting a few files using backup software. The files that make up a virtual machine can be recovered to any hardware without requiring any changes, because virtual machines are hardware-independent. Hardware-independence is what makes a virtual network a superior solution when it comes to disaster recovery. Any physical server can be the recovery target for the virtual servers.

As an example of improved disaster recovery, Information Systems staff would be able to take one of the existing servers in our current network, now available for use because of better resource allocation, and utilize it at another location, such as the Emergency Operations Center (EOC) at the Police Services Center or in a secure office at the Arroyo Vista Recreation Center (AVRC). That backup server would then be used in the case of an emergency that causes the City Hall network to be halted. After a simple restoration of disks, and/or after pointing the computers to the new location, the core network applications would be restored and working on the backup server. This transfer of files is illustrated in the exhibit on the following page.

This hardware independence also frees us to the possibility of working with another city for business continuity during an emergency. This contingency could be planned for in advance by having an agreement with another city that could include the configuration of a server at each city that would accept the files from the other city. Transferring these files electronically between cities may require a further upgrade of the system prior to implementation to permit the large file transfer that would be required. Initially, staff proposes to implement the disaster recovery plan that involves transferring the files to a server at the City's EOC and/or AVRC as previously discussed. This described disaster recovery plan would be in addition to file backup procedures that are already in place.



Allows a virtual machine to be run on any ESX server without modification.

Simplifies and automates disaster recovery workflows.

Turns manual recovery processes into automated recovery plans.

Building a virtual network will allow staff to achieve two specific objectives that the City Council adopted for the Fiscal Year 2007/08 budget year:

- Reorganization of City Hall computer room and servers (Objective VI.A.15.)
- Study and develop recommendations for computer and communication systems recovery planning for a catastrophic disaster involving loss of facility(ies) and/or equipment (Objective VI.A.12.)

To accomplish this task, new software, such as VMWare, will need to be acquired to transform or “virtualize” the hardware resources, and choices for hardware will need to be altered to reflect the needs of the new direction. The estimated cost for the VMWare software is \$7,500, which is currently not budgeted. The \$10,000 already budgeted for Fiscal Year 2007/08 for an Active Directory Domain Controller would now be used along with an additional cost estimated at \$2,000 to reconfigure the requirements of the new server that would be acquired for our new purpose. Also, a Storage Area Network (SAN) device would now be required at an estimated cost of \$32,000, as opposed to a Network Attached Storage device currently budgeted for \$15,000. The SAN increases

the data storage and access speed significantly. The difference in cost for the SAN is estimated to be an additional \$17,000. Lastly, the existing memory in the servers the City already has would need to be upgraded at a cost estimated to be \$1,700. Added together, the additional funds needed to accomplish the virtual network is estimated to total \$28,200. Funds already budgeted for consulting services (in Line Item 0100-3120-0000-9102) may be used for technical assistance as needed. As much as half or more of the requested amount may be covered by cost savings in other accounts within the Administrative Services Department budget; however, at this time it's requested that the full amount needed be funded from the Internal Services Fund reserve so this project can proceed immediately.

FISCAL IMPACT

A budget increase of \$28,200 from the Internal Services Fund is requested to achieve the goal of a virtual computer network, which increase consists of \$19,000 for Line Item 0100-3120-0000-9503 (Capital Outlay Computer Equipment), to cover the cost of the hardware; \$7,500 for Line Item 0100-3120-0000-9102 (Contractual Services) for the software; and \$1,700 for Line Item 0100-3120-0000-9201 (Computer Supplies/ Equipment Non-Capital) for upgrading existing server memory.

STAFF RECOMMENDATION ROLL CALL VOTE REQUIRED

Adopt Resolution No. 2008-_____.

Attachment: Draft Resolution

RESOLUTION NO. 2008 -

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MOORPARK, CALIFORNIA, AMENDING THE FISCAL YEAR 2007/08 BUDGET BY APPROPRIATING \$28,200 FROM THE INTERNAL SERVICES FUND TO THE ADMINISTRATIVE SERVICES DEPARTMENT, INFORMATION SYSTEMS DIVISION BUDGET (0100.3120)

WHEREAS, on June 20, 2007, the City Council adopted the budget for Fiscal Year 2007/08; and

WHEREAS, a staff report has been presented to said Council requesting a budget amendment appropriating \$28,200 from the Internal Services Fund; and

WHEREAS, Exhibit "A" hereof describes said budget amendment and its resultant impacts to the budget line item(s).

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MOORPARK DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. A budget amendment appropriating expenditures and revenue in the amount of \$28,200 from the Internal Services Funds as more particularly described in Exhibit "A" attached hereto is hereby approved.

SECTION 2. The City Clerk shall certify to the adoption of the resolution and shall cause a certified resolution to be filed in the book of original resolutions.

PASSED AND ADOPTED this 5th day of March, 2008.

Patrick Hunter, Mayor

ATTEST:

Maureen Benson, Assistant City Clerk

Attachment: Exhibit A – Budget Amendment

000118

EXHIBIT A
Budget Revision

A. Fund Allocation:

Fund No.	Fund Name	Amount
0100	Internal Services	\$28,200

B. Budget Appropriation:

BUDGET NUMBER	BUDGETED	REVISION	NEW BUDGET
0100-3120-0000-9503	\$ 27,000	\$19,000	\$ 46,000
0100-3120-0000-9102	\$115,925	\$ 7,500	\$123,425
0100-3120-0000-9201	\$ 28,000	\$ 1,700	\$ 29,700

Approved as to form: 