



CITY COUNCIL AGENDA ITEM

Date: February 4, 2016

To: Brian Kischnick, City Manager

From: Tom Darling, Financial Services Director
MaryBeth Murz, Purchasing Manager
Gert Paraskevin, Information Technology Director

Subject: Standard Purchasing Resolution 4: Cooperative Contract Awards – VMWare Host Server Replacements

History

In 2006, to better manage the City's server environment a Hewlett Packard BladeSystem c7000 Enclosure was purchased. At the time such an enclosure was the latest advancement in server technology. It allowed one cabinet to house multiple servers. Each server is a blade that slides into the cabinet. They all share input/output (I/O) connectivity and power in a much smaller space than separate racked servers would require, making it much more efficient. The cabinet purchased could hold up to 16 servers.

In May of 2009, the City added a new blade server to the cabinet that would function as a virtual host, utilizing VMWare software. Virtualization is the latest advancement in server management technology. The basic premise is that most servers have excess processing capacity. When implementing an application it is generally best practice to install each application on a separate server. As a result you end up with many physical servers each with excess capacity. Virtualization uses software to simulate the existence of hardware and create a virtual computer system. Doing this allows organizations to run multiple virtual systems, operating systems, and applications on a single physical server. This can provide economies of scale and greater efficiency.

In May of 2010 a second blade server was purchased to expand the virtual environment and provide redundancy with a second virtual host. VMWare offers functionality whereby if one of the blade servers should fail the virtual guests will automatically move to the other host and continue to function. This also allows maintenance on servers to be done without interrupting service. Eventually many of our physical servers and blades were converted into virtual guests residing on the 2 physical hosts. There are currently 31 guest servers in this environment. Each one has a specific purpose such as running an application or managing a database. As a result the number of physical servers was greatly reduced.

The blade system is now ten (10) years old, and the two virtual hosts are approaching six (6) and seven (7) years of age. We have had issues with both hosts that may be attributed to the environment. We have experienced some moisture and resulting corrosion in the data center where these are housed. In addition, we have reached capacity in regards to memory and processing power. This causes reduced overall server performance and limits expansion.



CITY COUNCIL AGENDA ITEM

History (continued)

Management proposes to replace the entire blade system including the two blade server hosts, with two rack mounted servers. With the advent of virtualization we have reduced the need for physical servers to the point that we no longer require the blade system. These servers will be more reliable and will have capacity to continue to expand and improve how we provide applications to employees and residents. They will include more memory, faster and more processors, and faster I/O connectivity.

Purchasing

- The City is proposing to purchase two new Hewlett Packard DL380 servers based on REMC pricing as outlined in Appendix A.
- The REMC Association of Michigan prequalifies vendors and equipment through a competitive bid process directed by the REMC Association SAVE Committee; is managed through a fiscal agent agreement with Ingham ISD. CDW-G of Chicago, IL is one of the awarded low bidders for server equipment on the current REMC contract.

Financial

Funds are available in the Information Technology Capital budget. The Project # is 20160002.

Recommendation

City Management requests the authorization to purchase two (2) new Hewlett Packard DL380 servers including hardware and five (5) years of maintenance, from CDW-G of Chicago, IL as quoted in Appendix A through the REMC Association of Michigan Program for an estimated total cost of \$43,036.86.



CITY COUNCIL AGENDA ITEM

Appendix A

Hewlett Packard REMC Server Quote

Items/description	Part number	Quantity	Extended price
Server Hardware:			
HP ProLiant DL380 Gen9 8SFF Server – base unit	719064-B21	2	\$ 2,725.82
HP DL380 Gen9 Intel Xeon E52699v3 (2.3GHz/18core/45MB/145W) FIO Processor Kit – first processor	781915-L21	2	9,342.54
HP DL380 Gen9 Intel Xeon E52699v3 (2.3GHz/18core/45MB/145W) FIO Processor Kit – second processor	781915-B21	2	9,342.54
HP 32GB Dual Rank x4 DDR42133 CAS151515 Registered Memory Kit	728629-B21	16	8,865.12
HP StoreFabric SN1000Q 16Gb Dual Port Fibre Channel Host Bus Adapter	QW972A	2	4,478.40
HP Ethernet 10Gb 2port 546FLRSFP+ Adapter	779799-B21	2	951.90
HP 2U Small Form Factor Easy Install Rail Kit	733660B21	2	146.00
HP 8GB microSD Enterprise Mainstream Flash Media Kit	726116B21	2	115.34
HP 800W Flex Slot Platinum Hot Plug Power Supply Kit	720479-B21	4	1,120.00
HP Class 10Gb SFP+ SR Transceiver	455883-B21	4	2,654.24
Maintenance			
HP 5y Nbd DL380 Gen9 FC SVC	U7AH5E	2	2,451.34
HP iLO Advanced 1 Server License with 5yr 24x7 Tech Support and Updates	BD505A/ U1M73E	2	843.62
Total cost for 2 servers including maintenance			\$ 43,036.86