IN THE COUNTY LEGISLATURE OF JACKSON COUNTY, MISSOURI

A RESOLUTION transferring $26,635.00 within the 2013 Assessment Fund and awarding a contract for the relocation, installation, and testing of the County's data center, for use by the Information Technology Department to Alexander Open Systems (AOS) of Overland Park, KS, at an actual cost to the County not to exceed $61,920.00, under the terms and conditions of the Cooperating School Districts of Greater Kansas City Contract No. C062512, an existing government contract.

RESOLUTION NO. 18186, June 3, 2013

INTRODUCED BY Scott Burnett, County Legislator

WHEREAS, the Information Technology Department is relocating its existing data center from its current location on the ground floor of the Downtown Kansas City Courthouse, to a new shared location in the Sixteenth Circuit Court Data Center located at 1305 Locust; and,

WHEREAS, pursuant to section 1030.4 of the Jackson County Code, 1984, the Director of Finance and Purchasing recommends the award of a contract for these services to Alexander Open Systems of Overland Park, KS, at a cost to the County not to exceed $61,920.00, under the terms and conditions set forth in the Cooperating School Districts of Greater Kansas City Contract No. C062512, an existing government contract; and,

WHEREAS, a transfer is necessary to cover a portion of the cost of these services; and,

WHEREAS, the County Executive recommends this transfer; now therefore,

BE IT RESOLVED by the County Legislature of Jackson County, Missouri, that the

following transfer be made within the 2013 Assessment Fund:

DEPARTMENT/DIVISION	CHARACTER/DESCRIPTION	FROM	TO
Assessment Fund Information Technology			
045-1305	56580 – Maint & Repair Data Pro	$18,500	
045-1305	56662 – Software Maintenance	$ 8,135	
045-1305	56080 – Other Professional Srvs		$26,635

and,

BE IT FURTHER RESOLVED by the County Legislature of Jackson County, Missouri, that

award be made as recommended by the Director of Finance and Purchasing, and that the

Director be and hereby is authorized to execute for the County any documents necessary

for the accomplishment of the award; and,

BE IT FURTHER RESOLVED that the Director of Finance and Purchasing is authorized to

make all payments, including final payment on the contract.

Effective Date: This Resolution shall be effective immediately upon its passage by a majority of the Legislature.

APPROVED AS TO FORM:

_____
Chief Deputy County Counselor

_____
County Counselor

Certificate of Passage

I hereby certify that the attached resolution, Resolution No. 18186 of June 3, 2013, was duly passed on ____June 17____, 2013 by the Jackson County Legislature. The votes thereon were as follows:

Yeas ____7____   Nays ____0____

Abstaining ____0____   Absent ____2____

____6/17/13____
Date

_____
Mary Jo Spino, Clerk of Legislature

Funds sufficient for this transfer are available from the sources indicated below.

ACCOUNT NUMBER: 045   1305   56580
ACCOUNT TITLE: Assessment Fund
                    Information Technology
                    Maintenance & Repair – Data Pro
NOT TO EXCEED: $18,500.00

ACCOUNT NUMBER: 045   1305   56662
ACCOUNT TITLE: Assessment Fund
                    Information Technology
                    Software maintenance
NOT TO EXCEED: $8,135.00

-3-

There is a balance otherwise unencumbered to the credit of the appropriation to which the expenditure is chargeable and there is a cash balance otherwise unencumbered in the treasury to the credit of the fund from which payment is to be made each sufficient to provide for the obligation herein authorized.

ACCOUNT NUMBER: 001   5101   56080
ACCOUNT TITLE: General Fund
                            Non-Departmental
                            Other Professional Services
NOT TO EXCEED: $18,940.00

ACCOUNT NUMBER: 001   1305   56080
ACCOUNT TITLE: General Fund
                            Information Technology
                            Other Professional Services
NOT TO EXCEED: $779.00

ACCOUNT NUMBER: 003   1305   56080
ACCOUNT TITLE: Park Fund
                            Information Technology
                            Other Professional Services
NOT TO EXCEED: $2,200.00

ACCOUNT NUMBER: 004   1305   56080
ACCOUNT TITLE: Special Road and Bridge Fund
                            Information Technology
                            Other Professional Services
NOT TO EXCEED: $4,300.00

ACCOUNT NUMBER: 045   1305   56080
ACCOUNT TITLE: Assessment Fund
                            Information Technology
                            Other Professional Services
NOT TO EXCEED: $35,701.00

May 3/2013
Date

(signature)
Director of Finance and Purchasing

REQUEST FOR LEGISLATIVE ACTION

SUBJECT	Action Requested ☒ Resolution ☐ Ordinance Project/Title: Transferring $26,635.00 within the Information Technology Department's budget and authorizing the purchase of Installation and Testing Services for the Information Technology Department from Alexander Open Systems (AOS) of Overland Park, Kansas in an amount not to exceed $61,920.00 under the terms and conditions of Cooperating School Districts of Greater Kansas City Contract No. C062512, an existing government contract.	
BUDGET INFORMATION *To be completed By Requesting Department and Finance*	Amount authorized by this legislation this fiscal year:	$61,920.00
	Amount previously authorized this fiscal year:	$
	Total amount authorized after this legislative action:	$61,920.00
	Amount budgeted for this item * (including transfers):	$61,920.00
	Source of funding (name of fund) and account code number:	
	001-5101-56080 General Fund, Non-Departmental, Other Professional Services	$18,940.00
	001-1305-56080 General Fund, IT, Other Professional Services	$ 779.00
	003-1305-56080 Park Fund, IT, Other Professional Services	$ 2,200.00
	004-1305-56080 Road & Bridge, IT, Other Professional Services	$ 4,300.00
	045-1305-56080 Assessment, IT, Other Professional Services	$ 9,066.00
	Sub-Total	$35,285.00
	Transfer From: 045-1305-56580 Assessment, IT, Maint & Repair – Data Pro	$18,500.00
	: 045-1305-56662 Assessment, IT, Software Maintenance	$ 8,135.00
	Transfer To: 045-1305-56080 Assessment, IT, Other Professional Services	$26,635.00
	Total	$61,920.00
	• If account includes additional funds for other expenses, total budgeted in the account is: $334,294.00 – 001-5101-56080 • $ 2,640.00 – 001-1305-56080 • $ 4,250.00 – 003-1305-56080 • $ 22,000.00 – 004-1305-56080 • $ 32,000.00 – 045-1305-56080 OTHER FINANCIAL INFORMATION: ☐ No budget impact (no fiscal note required) ☐ Term and Supply Contract (funds approved in the annual budget); estimated value and use of contract: Department: Estimated Use: $ Prior Year Budget (if applicable): Prior Year Actual Amount Spent (if applicable):	
PRIOR LEGISLATION	Prior ordinances and (date): Prior resolutions and (date): 18039, December 3, 2012	
CONTACT INFORMATION	RLA drafted by (name, title, & phone): Barbara Casamento, Purchasing Supervisor, 881-3253	
REQUEST SUMMARY	The Information Technology Department is moving from the existing Data Center located on the ground floor of the County Courthouse at 415 East 12th Street to the newly renovated and shared location in the County Courts IT Data Center at 1305 Locust. This transition requires professional installation and testing services of the new hardware and software purchased in 2012 from Alexander Open Systems under the terms and conditions of Cooperating School Districts of Greater Kansas City Contract No. C062512 and Resolution No. 18039 dated December 3, 2012. The specific services include the "racking and stacking" of new hardware, initial powering up, installation and configuration of key server software, deployment of new backup hardware and software, network configuration and loading of initial application software and data. These services are included under the terms and conditions of Cooperating School Districts of Greater Kansas City Contract No. C062512.	

	Pursuant to Section 1030.4 of the Jackson County Code, the Director of Finance and Purchasing recommends the purchase of Installation and Testing Services for the Information Technology Department from Alexander Open Systems of Overland Park, Kansas under the terms and conditions of Cooperating School Districts of Greater Kansas City Contract No. C062512, an existing government contract.

The Director of Finance and Purchasing also requests the transfer of $26,635.00 within the Information Technology's budget as follows:

	FROM:	TO:
045-1305-56580 Assessment Fund, IT, Maint & Repair – Data Pro	$18,500.00	
045-1305-56662 Assessment Fund, IT, Maintenance Software	$ 8,135.00	
045-1305-56080 Assessment Fund, IT, Other Professional Services		$26,635.00

CLEARANCE	☐ Tax Clearance Completed (Purchasing & Department) N/A ☐ Business License Verified (Purchasing & Department) N/A ☒ Chapter 6 Compliance - Affirmative Action/Prevailing Wage (County Auditor's Office)
ATTACHMENTS	Memorandum from Mr. Bill Noll, Director of Information Technology; Alexander Open System's quote; the pertinent pages of Cooperating School Districts of Greater Kansas City Contract No. C062512 and Resolution No. 18039

REVIEW	Department Director: *Bill Noll*	Date: 5-30-2013
	Finance (Budget Approval): *Deborah J Ball* *If applicable*	Date: 5·30- 13
	Division Manager:	Date:
	County Counselor's Office:	Date:

Fiscal Information (to be verified by Budget Office in Finance Department)

☒   This expenditure was included in the annual budget.

☐   Funds for this were encumbered from the _____ Fund in ____ .

☒   There is a balance otherwise unencumbered to the credit of the appropriation to which the expenditure is chargeable and there is a cash balance otherwise unencumbered in the treasury to the credit of the fund from which payment is to be made each sufficient to provide for the obligation herein authorized.

☐   Funds sufficient for this expenditure will be/were appropriated by Ordinance #

☐   Funds sufficient for this appropriation are available from the source indicated below.

Account Number:	Account Title:	Amount Not to Exceed:

☐   This award is made on a need basis and does not obligate Jackson County to pay any specific amount. The availability of funds for specific purchases will, of necessity, be determined as each using agency places its order.

☐   This legislative action does not impact the County financially and does not require Finance/Budget approval.

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Fiscal Note:
Jackson County, Missouri

Funds sufficient for this transfer are available from the sources indicated below.

PC# _____

Date: May 30, 2013

RES # 18186

Department / Division	Character/Description	From	To
Assessment Fund - 045			
1305 - Information Technology	56580 - Maint & Repair - Data Pro	18,500	
	56662 - Software Maintenance	8,135	
	56080 - Other Professional Srvs		26,635

Fiscal Note:

This expenditure was included in the Annual Budget.

PC# 51012013036

Date: May 30, 2013

RES #

Department / Division	Character/Description		Not to Exceed
General Fund - 001			
5101 - Non-departmental	56080 - Other Professional Srvs		18,940
1305 - Information Technology	56080- Other Professional Srvs		779
Park Fund - 003			
1305 - Information Technology	56080 - Other Professional Srvs		2,200
Road and Bridge Fund - 004			
1305 - Information Technology	56080 - Other Professional Srvs		4,300
Assessment Fund - 045			
1305 - Information Technology	56080 - Other Professional Srvs		35,701
Total from all funds			61,920

Alderman L. Ball 5-30-13
Budgeting

Department of
INFORMATION TECHNOLOGY
JACKSON COUNTY, MISSOURI

(816) 881-3151

415 EAST 12TH STREET, ROOM G-8
KANSAS CITY, MO 64106

To: Barbara Casamento

From: Bill Noll

Date: May 30, 2013

Re: Recommendation for procuring services to move our County Data Center

This is a formal recommendation and request for Jackson County to enter into a services agreement with Alexander Open Systems (AOS) to affect the move of the county's data center. AOS is the vendor with whom we worked to design the hardware and software solution which will permit Jackson County to move our primary data center from the ground floor of the downtown courthouse to co-locate with the court's data center located at 1305 Locust. I have separately supplied an additional document, containing the "Scope of Work" agreement which details the services to be provided and which has been agreed to by AOS and Jackson County IT.

Below, I have summarized the task list of services to be provided by AOS to complete the move of the county's data center. All tasks address the installation, configuration and ultimate deployment of data center hardware and software.

- Unpack the hardware from the shipping containers
- Validate once again that all necessary equipment has been included in the original shipments
- Stack the new equipment into new racks at the new Data Center
- Connect all new equipment power cords to power receptacles
- Power on and conduct preliminary diagnostics and testing
- Deploy and configure new Data Center fabric switches which provides inter-connectivity between all new servers, Storage network and subsequent data network
- Connect new hardware infrastructure to internal data center network
- Deploy and install new high speed network switches which will connect the court house with the new data center which will utilize the newly installed fiber
- Connect internal networks with the new high speed switches
- Install all manufacturer's software and new updates.
- Configure VMware to match agreed upon design.
- Configure new Storage disks to match agreed upon design.

- Develop migration procedure for moving server applications from the old equipment to new servers running VMware. Develop similar migration for all of each respective application's data.
- Establish data replication services between the 2 new Storage disk arrays (SANS); involves software configuration
- Install new data backup appliance.
- Configure data backup software to begin executing automated regularly scheduled backups

All electrical and data cabling work required to support this move has already been installed based upon a separate effort by R.F. Fisher.

Please let me know of any additional information that I can provide to assist you in this process.

Sincerely,

Bill Noll
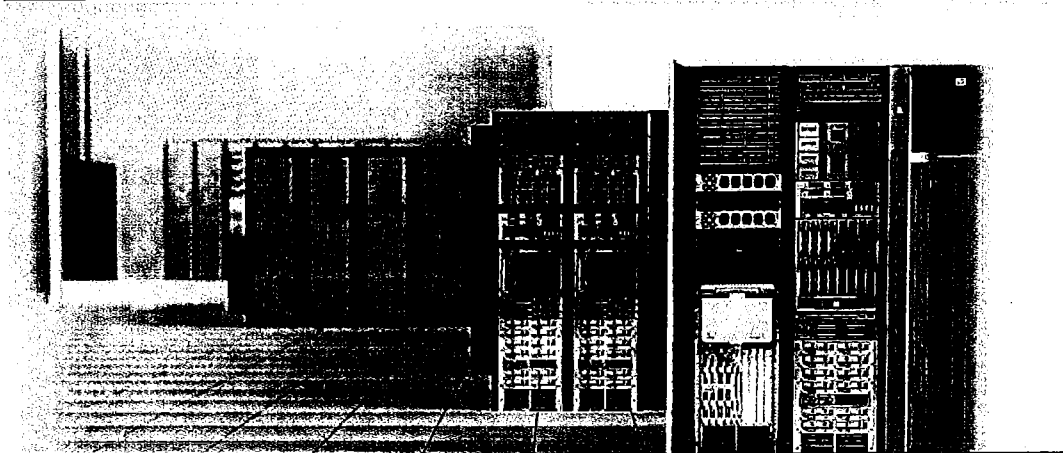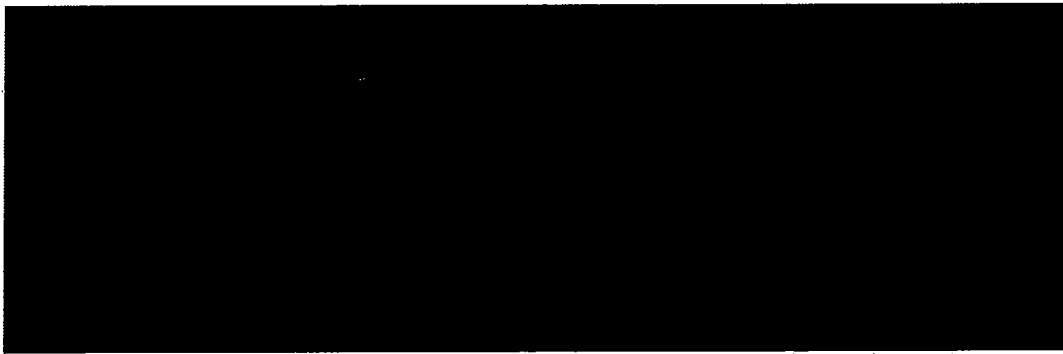
STORAGE REPLACEMENT AND AVAMAR SERVICES

Statement of Work for Data Center Services

Account Manager: Jeremy Dautenhahn

Design Architect: Mark Ortiz

Date: January 23, 2012

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Statement of Work

This Statement of Work covers professional services work AOS will perform for Jackson County Missouri. Beginning on a mutually agreed upon date, AOS will provide one or more qualified technical consultants and/or Project Management personnel on a "fixed fee" basis to install a new VNX5300 Storage array at the Jackson County Circuit Court located at 1305 Locust Street, install a new VNX5300 at the Downtown Court House located at 415 E 12th Street, install RecoverPoint replication between the storage arrays, install 2 new Cisco MDS Fibre Switches at each site, install 2 Cisco Nexus 5548 switch at each site, install Cisco UCS solution in the Circuit Court location, and install an Avamar Backup solution in the Downtown Court House location.

AOS will consider additional work not explicitly stated in this Statement of Work as "out-of-scope" and will require a "change order".

Jackson County Missouri Executive Summary

Jackson County would like to for AOS to aid them in refreshing their current core infrastructure technology. This refresh will include replacement of their core storage platforms for both production and disaster recovery and include a new replication technology to will bolster their ability to recover from a disaster. The County is currently embracing virtualization technology as part of this refresh the current virtualization compute platform will be replaced with a purpose built blade server technology. Lastly a new backup strategy will be put into place. This technology will leverage hardware, software and de-duplication at an enterprise level. The solution will also include the capability to centrally manage backup data regardless of where the data is located.

Production Storage Solution
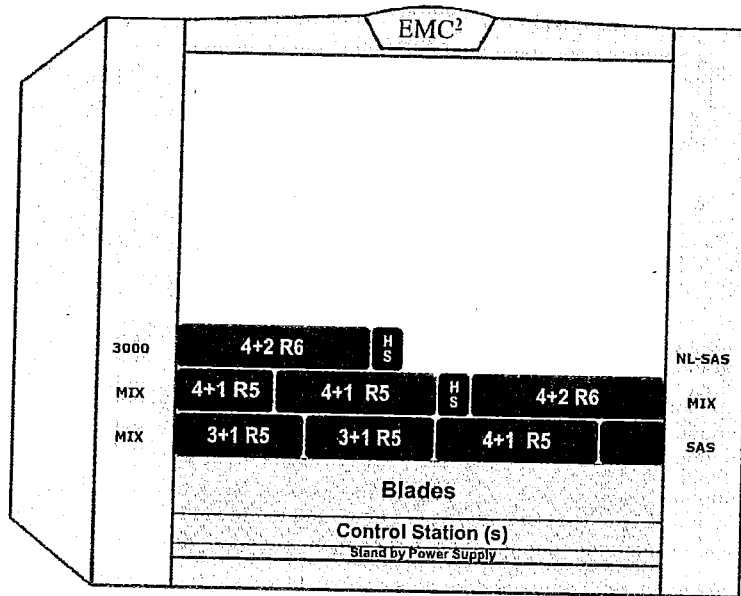
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Usable Capacity

	SAS	NL-SAS	FLASH	Total
Disks Used	24	13	0	37
Usable Capacity(TB)	7.30	21.48	0.00	28.78

Disk Tab Information

FLASH		SAS		NL-SAS		FAST Cache	
100GB	0	300GB	8	1000GB	0	100GB	0
200GB	0	600GB	16	2000GB	0	200GB	0
		900GB	0	3000GB	13		

Disaster Recovery Storage Solution
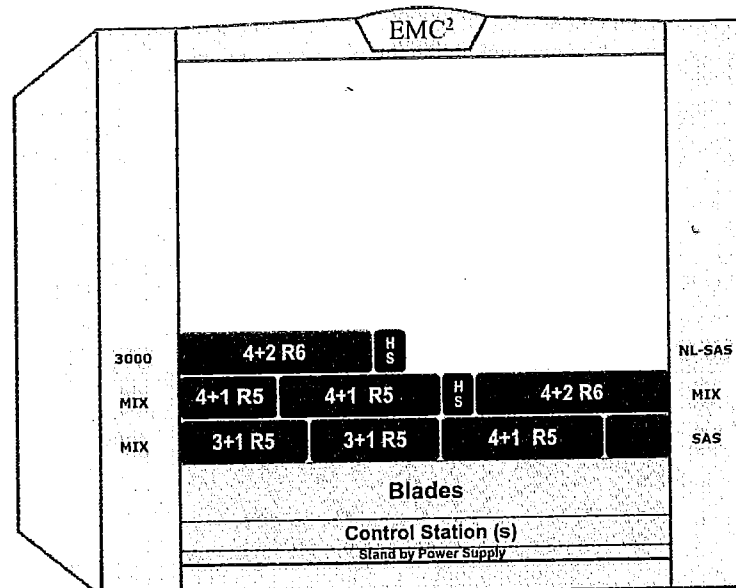
Usable Capacity

	SAS	NL-SAS	FLASH	Total
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Usable Capacity(TB)	7.30	21.48	0.00	28.78

Disk Tab Information

FLASH		SAS		NL-SAS		FAST Cache	
100GB	0	300GB	8	1000GB	0	100GB	0
200GB	0	600GB	16	2000GB	0	200GB	0
		900GB	0	3000GB	13		

Infrastructure Layout

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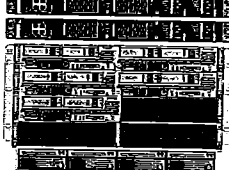
Proposed Configuration
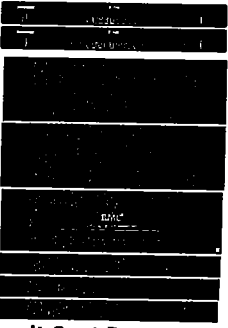
NEW — Cisco Nexus 5548 10GB Switch

NEW — Cisco MDS 9124 8port each

NEW — Avamar 12TB
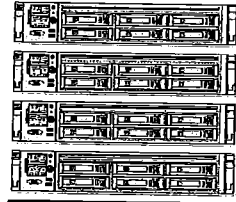
NEW — Cisco Unified Compute System 4 Blade Servers / NEW Vmware Farm
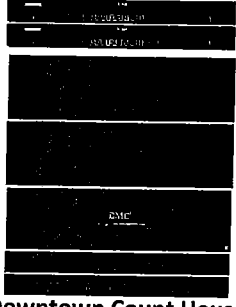
NEW

Cisco Nexus 5548 10GB Switch — NEW

Cisco MDS 9124 8port each — NEW

Old Prod Vmware Farm moves to DR

NEW

EMC RecoverPoint
- Block-based replication solution for heterogeneous local and remote replication
- Recover data at the local or remote site to any point in time
- Reduce bandwidth cost with policy-driven bandwidth reduction and compression Integrated with RPO/RTO Policy
- Enable continuous local and remote replication without affecting production performance

Circuit Cout Data Center
NEW EMC
VNX 5300
28TB Usable

Downtown Count House Data Center
NEW EMC
VNX 5300
28TB Usable

Backup Infrastructure

Avamar 12TB Solution Provides 14 day retention

Replication Infrastructure
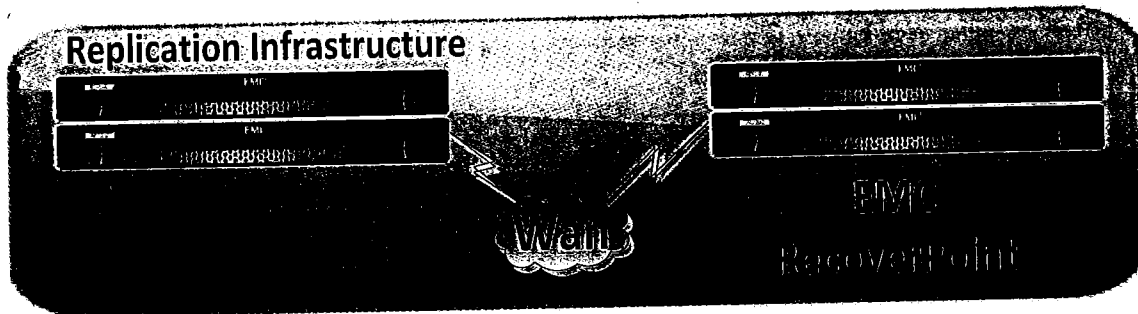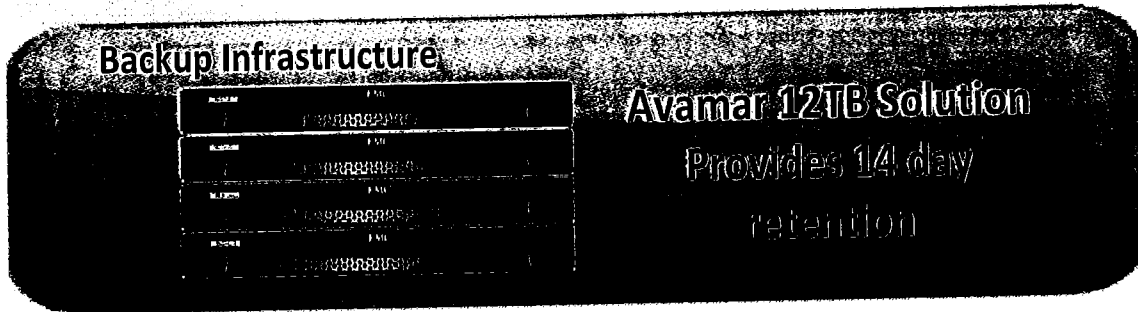
EMC RecoverPoint

NOTES:

EMC RecoverPoint is a journal based replication technology. RecoverPoint will require dedicated drive capacity to accommodate the journals. Best Practice is to not have RecoverPoint journals in the same virtual pool as your production data. For this reason the Engineer will select a drive set of SAS drives to dedicate to RecoverPoint.

EMC Avamar was selected as the new enterprise backup solution. The current sizing is for 12TB of de-duplicated data. The current enterprise contains approximately 17TB of capacity. The Avamar Grid as designed will not contain enough capacity to account for the entire environment.

Scope and Approach

Experienced AOS personnel, or authorized agents, will perform the following implementation tasks:

Cisco Unified Compute System Deployment

Site preparation required for UCS:

- The Cisco 5108 Blade Enclosure requires 4 NEMA C19 power cables per chassis.
- 208 volt power is required for the 5108 chassis.
- A minimum of 2 Ethernet connections from each fabric interconnect will be required to connect to the Customer's existing Ethernet infrastructure.
- The MDS Fiber Channel switches will require 2 Ethernet connections to the Customer's existing Ethernet infrastructure for management.
- A minimum of 2 Fiber Channel connections from each fabric interconnect will be required to connect to the Customer's existing Fiber Channel infrastructure.
- Each Fabric Interconnect will require 1 IP address for management.
- Each MDS Fiber Channel switch will require 1 IP address for management.
- The UCS Chassis virtual cluster will require 1 IP addresses.
- Each installed blade will require 2 IP addresses.
- Cisco Site ID, Contract Number, and a Customer CCO login will be required during setup of the UCS system.

AOS Engineer will perform the following installation tasks:

- Validate and inventory Cisco UCS parts.
- Unbox, rack, and wire the Cisco UCS kit:
    - 2 Fabric Interconnects
    - 5108 Blade chassis enclosure(s).
    - Blade Servers (all assembly as required).
- Configure management IP addressing on the Fabric Interconnects and UCS Chassis.
- Configure network connectivity between Fabric Interconnects and UCS Chassis.
- Work with the Customer to configure upstream connectivity from the UCS system to the Customer Ethernet infrastructure.
- Work with the Customer to configure upstream connectivity from the UCS system to the Customer Fiber Channel infrastructure.
- Work with the Customer to determine proper configuration of pools and profiles for the environment.
- Configure network and SAN connectivity between the Fabric Interconnects and UCS Chassis.
    - VLANs, VSANs, vNICs, vHBAs, MAC Pools, WWN Pools, Polices
- Configure Service Profile templates and apply to the blades.

- Configure Administrative tasks within the UCS infrastructure. This includes but it not limited to User, Alert, and Call Home configuration.
- Test and set management TCP/IP addresses of the 6120 interconnects (3 TCP/IP addresses required)
- Validate the implementation using the AOS Test Plan.
- Complete "As Built" documentation with the current configuration of the solution at time of installation.
- Provide a minimum Functional Overview of all related hardware, software, and documentation used in any project. AOS does not consider such an overview a substitute for formal product education. Please talk to the account manager about professional training services and additional documentation services.

Note: It is highly recommended that the customer dedicate multiple resources to work with AOS Engineers during the course of the entire project. This will greatly increase the customer's proficiency with administration of the system.

Cisco MDS 9124 Fibre Channel Switch Implementation

Production Circuit Court Location:

- Rack, wire, and configure (2) Cisco 9124 Fibre Channel Switches.
  - o Existing fibre switches exist. It may be beneficial to review zoning configurations.
- Zone new UCS platform to new VNX system.
- Zone in legacy NS120 platform to aid with Data Migration.
- Zone in RecoverPoint Appliances.
- Ensure that all connectivity is functional.

Disaster Recovery Court House Location:

- Rack, wire, and configure (2) Cisco 9124 Fibre Channel Switches.
  - o Existing fibre switches exist. It may be beneficial to review zoning configurations.
- Zone in legacy VMware Servers (if applicable)
- Zone in legacy NS120 platform to aid with Data Migration (if applicable)
- Zone in RecoverPoint Appliances.
- Ensure that all connectivity is functional.

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- Provide a minimum Functional Overview of all related hardware, software, and documentation used in any project. AOS does not consider such an overview a substitute for formal product education. Please talk to the account manager about professional training services and additional documentation services.

Note: It is highly recommended that the customer dedicate multiple resources to work with AOS Engineers during the course of the entire project. This will greatly increase the customer's proficiency with administration of the system.

EMC VNX 5300 Implementation – Circuit Court Location

Site preparation required for VNX 5300:

- Base VNX hardware (SPS, DPE/SPE, DM, CS) requires 5 C13 or NEMA 5-15 power outlets.
- Each additional VNX DAE requires 2 C13 or NEMA 5-15 power outlets.
- Two 20 Amp circuits will be required.
- The VNX will require 2 1Gb Ethernet connection for management.
- The VNX will require 2 IP addresses for management.
- The VNX will require at least 4 1Gb or 2 10Gb Ethernet connections for iSCSI. In addition iSCSI traffic will require 2 dedicated VLANs.
- The VNX will require at least 2 1Gb or 2 10Gb Ethernet connections for CIFS and NFS traffic.
- The VNX will require 1 or more IP addresses for CIFS or NFS traffic.
- This solution will require 18 rack units of standard 19" 4 post rack space.

AOS Engineer will perform the following installation tasks:

- Validate all components are onsite.
- Install all array related components into Customer supplied 4 post rack.
    - Control Station(s).
    - DPE (DataProcessor Enclosure).
    - Data Movers
    - SPS (Stand-by Power Supply).
    - DAE (Drive Array Enclosure).
- EMC VNX 5300 Storage Array configuration tasks.
    - Working with the Customers storage Administrator(s), talk through possible storage scenarios that will best support the new storage deployment. This will include both Block and File based scenarios.

- o Implement the agreed upon storage layout leveraging traditional Raid Groups or FAST Virtual Pools, as well as, CIFS/NFS configurations according to the options purchased with the array.
- o Create agreed upon Block level LUNs, Block level Storage Pools, file level CIFS file shares, and file level NFS mount points.
- o Work with the Customer network Administrator(s), talk through possible options for connecting the array to the Customer supplied network.
- o Implement agreed upon network connectivity leveraging iSCSI over 1 Gbit Ethernet network, Fiber Channel over 2/4/8Gbit Fiber Channel network, CIFS/NFS over 1 Gbit Ethernet.
- o Configure TCP/IP ports with appropriate vLAN(s) and Port Channels.
- o Configure FC ports with appropriate vSAN(s) and perform required FC zoning.
- o Attach up to 6 Customer supplied Host Servers.
  - These host servers will be limited to Microsoft Windows, Linux, or VMware ESX/ESXi.
  - These host servers will be internal hard drive boot only (No boot from SAN).
  - HBA and required software installation will require a reboot of the host.
- Configure block replication utilizing RecoverPoint (covered in detail in another section).
- Validate the implementation using the AOS Test Plan.
- Complete "As Built" documentation with the current configuration of the solution at time of installation.
- Provide a minimum Functional Overview of all related hardware, software, and documentation used in any project. AOS does not consider such an overview a substitute for formal product education. Please talk to the account manager about professional training services and additional documentation services.

Note: It is highly recommended that the customer dedicate multiple resources to work with AOS Engineers during the course of the entire project. This will greatly increase the customer's proficiency with administration of the system.

Recover-Point /SE CRR – Implementation (Both Locations)

- Unbox, rack, and wire (2) RecoverPoint Appliances (RPA) into a Customer supplied standard 19" data rack within the Production Data Center. (This will require, 2 rack units of space).
  - o The RPA's require Fibre Channel connectivity:

- If FC Director or Departmental switches are to be used perform all required zoning to complete connectivity.
    - Direct connect the RPA's to open FC ports on the EMC VNX or CLARiiON array.
  - Four total EC320-C14 power receptacles will be required per site.
  - Five total TCP/IP addresses will be required per site.
  - Deploy the VNX / CLARiiON array based splitter on the VNX5300 array.

RecoverPoint Continuous Remote Replication (CRR)

- Install up to four RecoverPoint Appliances (RPA) total:
  - Two RPAs clustered at the local site.
  - Two RPAs clustered at the remote site.
    - The configuration of the RPA's at the remote site may be performed from the local site via RecoverPoint Deployment Manager.
- Install the RecoverPoint/SE client software on up to (2) servers.
- Perform all necessary SAN work, which may include:
  - Configuration of the array-based splitter solution on a Customer provided VNX or CLARiiON storage array.
  - Perform all necessary fibre channel zoning.
- Perform all necessary configurations on the clustered RPA's via RecoverPoint Deployment Manager.
- Build and document the proposed architecture, using data from the Configuration Guide.
- Configure RecoverPoint/SE remote replication, including consistency groups and replication jobs:
  - Up to (4) consistency groups total (local and remote sites).
  - Up to 3 LUNs total (local and remote sites).
  - Up to 5TB of data total.
    - Note: During initial data transfer the AOS Engineer may not remain onsite. AOS recommends creating a smaller LUN, performing the data transfer testing, and verifying with the Customer that the configuration is completed. AOS will validate the consistency group status at the end of the data transfer.
- Complete and deliver the Configuration Guide.
- Validate the implementation using RecoverPoint Test Plan.
    - Note: When performing failover test, use small LUNs (5GB of less).
- Conduct a basic product functional/administrative knowledge transfer to familiarize the Customer with the implemented RecoverPoint appliances, demonstrating the normal operations as installed in the Customer's environment.

EMC VNX 5300 Implementation – Court House Location

Site preparation required for VNX 5300:

- Base VNX hardware (SPS, DPE/SPE, DM, CS) requires 5 C13 or NEMA 5-15 power outlets.
- Each additional VNX DAE requires 2 C13 or NEMA 5-15 power outlets.
- Two 20 Amp circuits will be required.
- The VNX will require 2 1Gb Ethernet connection for management.
- The VNX will require 2 IP addresses for management.
- The VNX will require at least 4 1Gb or 2 10Gb Ethernet connections for iSCSI. In addition iSCSI traffic will require 2 dedicated VLANs.
- The VNX will require at least 2 1Gb or 2 10Gb Ethernet connections for CIFS and NFS traffic.
- The VNX will require 1 or more IP addresses for CIFS or NFS traffic.
- This solution will require 12 rack units of standard 19" 4 post rack space.

AOS Engineer will perform the following installation tasks:

- Validate all components are onsite.
- Install all array related components into Customer supplied 4 post rack.
    - Control Station(s).
    - DPE (DataProcessor Enclosure).
    - Data Movers
    - SPS (Stand-by Power Supply).
    - DAE (Drive Array Enclosure).
- EMC VNX 5300 Storage Array configuration tasks.
    - Working with the Customers storage Administrator(s), talk through possible storage scenarios that will best support the new storage deployment. This will include both Block and File based scenarios.
    - Implement the agreed upon storage layout leveraging traditional Raid Groups or FAST Virtual Pools, as well as, CIFS/NFS configurations according to the options purchased with the array.
    - Create agreed upon Block level LUNs, Block level Storage Pools, file level CIFS file shares, and file level NFS mount points.

- o Work with the Customer network Administrator(s), talk through possible options for connecting the array to the Customer supplied network.
- o Implement agreed upon network connectivity leveraging iSCSI over 1 Gbit Ethernet network, Fiber Channel over 2/4/8Gbit Fiber Channel network, CIFS/NFS over 1 Gbit Ethernet.
- o Configure TCP/IP ports with appropriate vLAN(s) and Port Channels.
- o Configure FC ports with appropriate vSAN(s) and perform required FC zoning.
- o Attach up to 6 Customer supplied Host Servers.
    - These host servers will be limited to Microsoft Windows, Linux, or VMware ESX/ESXi.
    - These host servers will be internal hard drive boot only (No boot from SAN).
    - HBA and required software installation will require a reboot of the host.
- Configure block replication utilizing RecoverPoint (covered in detail in another section).
- Validate the implementation using the AOS Test Plan.
- Complete "As Built" documentation with the current configuration of the solution at time of installation.
- Provide a minimum Functional Overview of all related hardware, software, and documentation used in any project. AOS does not consider such an overview a substitute for formal product education. Please talk to the account manager about professional training services and additional documentation services.

Note: It is highly recommended that the customer dedicate multiple resources to work with AOS Engineers during the course of the entire project. This will greatly increase the customer's proficiency with administration of the system.

EMC Avamar Implementation

Site preparation required for Avamar:

- Each Avamar hardware component will require 2 physical rack units.
- Each Avamar hardware component will require 2 C13 or NEMA 5-15 power outlets.
- Each Avamar hardware server will require 1 or 2 (for High Availability) 1Gb Ethernet connection(s) to Customer supplied Network infrastructure.
- Each Avamar node will require 1 IP address on the Customer's network.
- An additional IP address is recommended, which will be used for the Remote Access port on each node.

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- The remote access port on the server can share the primary Ethernet connection on each node if the DRAC IP address is on the same subnet as the node. If on a different subnet an additional Ethernet connection will be required per node.

Setup Diagram
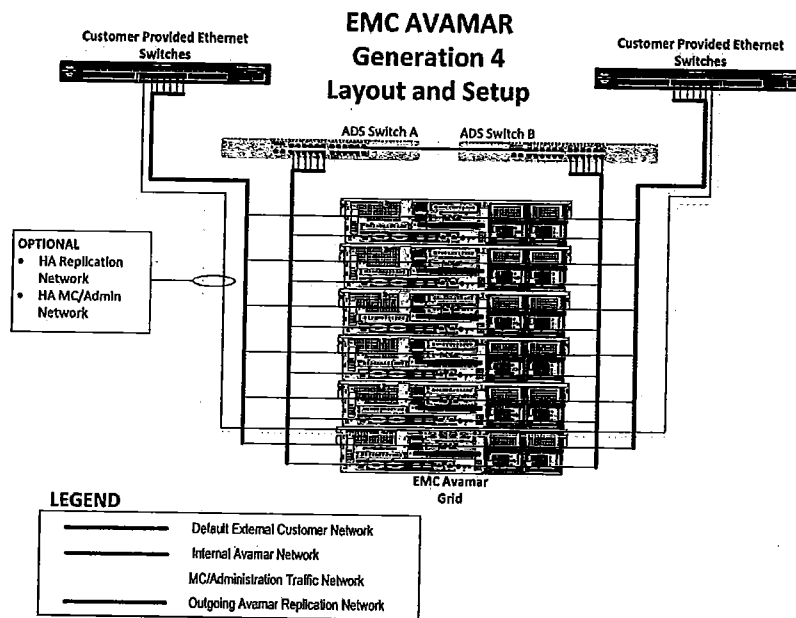
Figure 1

AOS Engineer will perform the following installation tasks:

- Validate all components are onsite.
- Install all Avamar hardware nodes into Customer supplied standard 4 post rack.
- Install Avamar Cube switches into Customer supplied standard 4 post rack.
- Install latest available Avamar software version.
- Install Avamar Downloader Service on a Customer supplied Windows 2003 or 2008 (non R2) server.
- Configure retention policies, datasets, schedules, and polices with the Customer's assistance based on Customer's requirements.
- Install, configure, and activate up to (10) EMC Avamar client agents as a demonstration for the Customer.

- Demonstrate restore capabilities of the system. This is limited to 10GB of File system data, 40GB of VMware Image, and 10GB of database data. All restores should be done with test data to ensure no production data is inadvertently over-written as part of the testing phase.
- Validate the implementation using the AOS Test Plan.
- Complete "As Built" documentation with the current configuration of the solution at time of installation.
- Provide a minimum Functional Overview of all related hardware, software, and documentation used in any project. AOS does not consider such an overview a substitute for formal product education. Please talk to the account manager about professional training services and additional documentation services.

Note: It is highly recommended that the customer dedicate multiple resources to work with AOS Engineers during the course of the entire project. This will greatly increase the customer's proficiency with administration of the system.

Cisco Nexus 5548 Implementation

Rack and Stack (4) Cisco Nexus 5548UP 10GB network switches at the following locations:

- 415 E 12th Street – Data Center
- 1305 Locust Street – Data Center

Note – These locations are across the street from each other.

Switch Configuration

Specific configuration details for the core switches include:

- Architecture
  - Operating System: NX-OS
  - High Availability Pair
  - (2) uplinks \ trunks per closet
  - Collapsed Core
  - Multi-Chassis Ethernet Trunk (MCT)
- Basic Management Parameters
  - Encrypted passwords
  - SNMP community strings
  - Console access
  - Remote administrative access

- o SPAN\VSPAN
- o Cisco Discovery Protocol
- Layer2
  - o Up to 10 vLANs
  - o Spanning Tree Protocol: MST
  - o Virtual Port Channel (vPC)
  - o Root Guard
  - o BPDU Guard
  - o PortFast
  - o Bridging
- Multilayer Switching \CEF
- AOS Best Practices
  - o Debounce Timer
  - o Broadcast and Multicast Suppression
  - o Baby Giants and Jumbo Frames
  - o Error-Disable
  - o UDLD (optic interfaces)
- Security Best Practices
- Authentication, Authorization, Accounting (AAA)

Customer Services

- AOS will provide (1) cutover service as part of this statement of work
- AOS anticipates this cutover will need to occur outside of normal business hours

Data Migration Services

Any and all data migration services are to be billed separately on a Time & Materials basis.

Data of key interest would include:

- VMware VMFS Partitions
- Ret Hat Linux data including data base information.

Anything Services not specifically included in this document is EXCLUDED.

Deliverables

- Documentation of Physical layout of Environment
- Documentation of Logical layout of Environment
- Operational Administration and Best Practices Manuals
- Cisco Nexus switch configurations
- Topology diagram

Customer Responsibilities

In addition to any work tasks assigned to the client above in this Statement of Work, the Client agrees to the following preparations for this project:

- Ensure that any data on the existing arrays to be migrated has been fully backed up prior to the AOS Engineer coming onsite for this engagement.
- Customer is responsible for ensuring that a full backup of systems and data is performed prior to upgrade process. Failure to do this can result in data loss and is not a part of the statement of work to restore data.
- Ensure that proper power is available, any necessary rack space has been allocated and proper environmental requirements are met for any new equipment installations prior to the consultant arriving on site. Failure to provide proper environmental conditions could void server/appliance factory warranties or, may result in a Change Management request and appropriate cost adjustments.
- Customer must designate a minimum of two (2) staff members to serve as primary and secondary contacts for the duration of this project. Please see "Contacts and Resources" section within this Statement of Work.
- Customer is responsible for allowing AOS to access facilities during normal business hours from 8 AM – 5 PM, Monday – Friday. Any scheduling outside of normal business hours must be coordinated through project's designated contact(s) with one week advanced notice, (based upon availability) to allow for resource schedule coordination and procurement.
- Have any required existing server/host hardware and supported Operating Systems in good health with required service packs and/or patches applied prior to the consultant arriving on site. Systems requiring additional updates not specified in this Statement of Work will be out-of-scope and require a change form be completed.
- Provide an adequate workspace for AOS on site personnel with network connections to the Internet and customer's network as required including parking, phone, necessary network connection information, IP addressing, proxy account information, etc. while satisfying customer

Security Policy requirements. (Note: In preparation of conversion to virtual machines run defragmentation and disk clean up on target servers)

- Provide remote access connectivity as required to assist in the completion of this statement of work. (Assumes compliance with existing customer security policy.)
- Have customer personnel available during implementation window to provide any required assistance and/or facilitate necessary communications to accomplish the required work.

Contacts and Resources

AOS will perform work at the following location(s):

Location	Contact
415 E 12Th Street G-8, Kansas City, MO	John Haas
1305 Locust Street, Kansas City, MO	Wayne Terry

Project Contacts

Name	Position/Company	Project Role
John Haas JHaas@jacksongov.org Ph: (816) 564-4294	System Administrator Jackson County, MO	Project Primary Contact
Mike Lear mlear@jacksongov.org Ph: (816) 881-3153	Assistant Director of IT Jackson County, MO	Project Primary Contact
Jeremy Dautenhahn Jeremy.Dautenhahn@aos5.com Ph: (913) 307-2300	Account Manager Alexander Open Systems	Primary AOS Sales Contact
Mark Ortiz David.Englebrick@aos5.com Ph: (913-307-2394	Design Architect Alexander Open Systems	Technical AOS Sales Contact
Mark Ortiz David.Englebrick@aos5.com Ph: (913-307-2394	Design Architect Alexander Open Systems	Technical AOS Sales Contact

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AOS Scheduling scheduling-kc@aos5.com Ph: (913) 307-2330	Alexander Open Systems	AOS Engineer Scheduling

Consulting Fees

The following table lists the costs for a Fixed Fee engagement. Shipping and taxes are not included. All prices are in U.S. dollars. See *Pricing Assumptions* below for additional information.

Fixed Fee Description	Total Price
Total Services	**$61,920.00**

Pricing Assumptions

- Unless otherwise identified within the scope or service brief, AOS bills travel one way to the customer site from the nearest AOS Office within that region at the identified engineer hourly rates. Except for the cutover(s) specified in this SOW, AOS will perform work during normally scheduled working hours (8:00 A.M. to 5:00 P.M. local time Monday through Friday), excluding AOS \ customer observed holidays. AOS will charge any work performed outside of these normal business hours at the rates shown below:
  - Overtime & Weekends billed at Normal Business Hours (NBH) + 50%
  - Holidays billed at Normal Business Hours (NBH) + 100% w/ (2) hour minimum
  - Emergency support billed at Normal Business Hours (NBH) + 50% w/ (2) hour minimum
- AOS will assess a cancellation fee of $200 for scheduled work customer cancellations with less than 24 hour advanced notification. Notification of cancellations can be made to any of the contacts listed in the Contacts and Resources section.
- AOS sales and services are subject to any applicable AOS Master Services Agreement.
- Jackson County Missouri hereby assumes all costs associated with said requested services. Associated costs include, but are not limited to, those that are set by AOS under this Statement of Work. AOS agrees to obtain approval by Jackson County Missouri prior to incurring any costs in addition to those already itemized on this Statement of Work and the purchase order provided to AOS prior to the services being done.
- Typically, AOS will use local resources that will not require any travel expenses, assuming the work site is within an AOS office's local work area. In the event AOS needs a non-local resource, AOS will obtain prior written approval before incurring any travel charges. Jackson County Missouri will reimburse AOS for reasonable expenses incurred in

connection with our performance of the Services, if any are required, including travel expenses, lodging, meals, parking fees, copying charges, delivery charges, postage, telephone charges and other related expenses.

- Payment of the net amount of an invoice is due 30 days from the date of AOS invoice, unless otherwise specified in this Statement of Work. All Pricing is subject to Other Terms and Conditions attached hereto and incorporated by this reference herein. Refer to Master Services Agreement for further information.
- All applicable state and local taxes, shipping charges (FOB customer dock), travel and associated expenses will be added to invoice.

Other Terms and Conditions

- AOS is not responsible for configuration, compatibility, or products requested per customer-provided specifications. AOS has professional design consulting services available to quote upon request.
- AOS will coordinate the ordering, delivery, warranties, and maintenance agreements of all equipment and software components listed that are purchased through AOS.
- Customer is responsible for returning all trade-in merchandise to the designated parties or issue a certificate of destruction if that is required. AOS will charge for equipment not returned.
- AOS will subject additional delays or communication coordination with 3rd party providers, (Telco's, local ISP's, remote vendors, etc.) not reflected in this Statement of Work to a Change Management Form request.
- Customer must pay block contracts in full prior to receiving the discounted rate on work. AOS subjects Fixed Fee and Hourly services to progress billing at the end of each AOS monthly billing cycle.
- Customer agrees not to solicit or pursue for employment any AOS personnel. Each party agrees not to hire or solicit for employment (or as an individual independent contractor) any employee of the other party until twelve (12) months after the date such person terminates employment with the other party. AOS further agrees not to hire or solicit for employment (or as an individual independent contractor) any other individual while he or she is performing services for Customer pursuant to a contract. If this paragraph is breached by the hiring of an employee of AOS, damages for such breach are agreed to be equal to the demonstrated cost of training a replacement for such individual. This paragraph does not apply to the hiring or solicitation of any individual who did not become known to the hiring or soliciting party as a result of the relationship between Customer and AOS created by this Agreement.
- AOS will only process orders signed by an agent of the company. AOS will require a purchase order if required by Customer's organization.

- This Statement of Work does not imply or guarantee a specific date or time frame for services to begin. All project timelines will be mutually agreed to by and between Customer and AOS.

Customer Acceptance

Due to the competitive confidentiality of information provided the accompanying materials, AOS and Jackson County Missouri shall keep all such information in the strictest confidence and shall not be divulged to persons other than Jackson County Missouri employees unless authorized by AOS. AOS bases the recommendations for equipment, programs and services on information customer has furnished to AOS and on observations by AOS. While AOS believes the price and materials list to be sound, the degrees of success with which equipment, applications and services are applied to information, processing is dependent on many factors, some of which are beyond the reasonable control of AOS.

The signature below affirms and acknowledges that you have read the above contents in its entirety and agree to the terms and conditions of this proposal as outlined.

Accepted Jackson County Missouri by:

Name (Print): _____   Title: _____

Signature: _____   Date: _____

Accepted for Alexander Open Systems by:

Name (Print): _____   Title: _____

Signature: _____   Date: _____

NOTIFICATION OF
COOPERATING SCHOOL DISTRICTS OF GREATER KANSAS CITY
IT CONTRACT

July 1, 2012

CONTRACT TITLE: Cooperating School Districts of Greater Kansas City IT Contract #   C062512

CURRENT CONTRACT PERIOD: JULY 1, 2012 THROUGH JUNE 30, 2018

BUYER INFORMATION:

Name	DR. GAYDEN CARRUTH
Phone	816-753-7275
Email address	gcarruth@csdgkc.org

RENEWAL INFORMATION	Original Contract Period	Annually Renewable
	7/1/2012 through 6/30/2018	After 2018

ALL PURCHASES MADE UNDER THIS CONTRACT MUST BE FOR **PUBLIC SECTOR USE ONLY.** PURCHASES FOR PERSONAL USE ARE PROHIBITED.

THE USE OF THIS CONTRACT IS FOR SCHOOL DISTRICTS, UNIVERSITIES & ALL PUBLIC SECTOR.

Instructions for use of this contract, specifications, requirements, and pricing are attached.

CONTRACT NUMBER	VENDOR NUMBER	VENDOR INFORMATION	COOP PROCUREMENT
CO62512	AOS	ALEXANDER OPEN SYSTEMS, INC. **Columbia** 2415 Carter Lane Providence Point, Suite 1 Columbia, MO 65201 **Springfield** 636 West Republic Road, Unit F100 Springfield, MO 65807 **St. Louis** 1855 Bowles Ave, Suite 105 Fenton, MO 63026 **Toll Free:** 800-473-1110 **Fax:** 636-686-1010	YES

ALEXANDER OPEN SYSTEMS CONTACT INFORMATION FOR CONTRACT CO62512

Name	Title	Phone	Email
Chris Alexander	Principal	800-473-1110	Chris.Alexander@aos5.com
Tom Boehmer	VP of Sales, Springfield	417-799-0736	Tom.Boehmer@aos5.com
Jason Harris	VP of Sales, St. Louis/Columbia	573-441-5601	Jason.Harris@aos5.com
Matt Cussigh	President, KC Metro	800-473-1110	Matt.Cussigh@aos5.com

1. **Mandatory Use of Contract:**
   It is optional to utilize this contract. To utilize this contract, the Letter of Notification needs to be signed by Customer.

2. **General Information:**

2.1 AOS shall provide products and services, including pre-sales support, installation, engineering, help-desk/telephone/electronic support, maintenance, and professional services for any educational entity of the Cooperating School Districts of Greater Kansas City (CSDGKC), or other public entity or educational organization, in accordance with the terms and conditions defined herein. "Customer" as used herein, refers to Cooperating School Districts of Greater Kansas City or any entity purchasing under this procurement contract.

2.2 The acquisition of professional services is intended to support the design, acquisition and implementation of the Customer's technology applications and in concert with the provision of products acquired under the contract.

2.3 Any service work that might require prevailing wage determinations from the Missouri Department of Labor Standards shall not be performed under this contract.

2.4 The Customer reserves the right to lease/purchase equipment under the contract.

2.5 AOS shall provide new and unused equipment and accessories (equipment/accessories only certified as new shall not be acceptable) made of first class materials. Used, remanufactured, or refurbished equipment shall not be acceptable.

2.6 AOS must provide all promotional and trade-in pricing to the Customer if applicable.

2.7 AOS must provide equipment that is equipped with the latest software release version, unless a Customer requests an alternative software version be installed on the equipment.

2.8 The shipping company or Manufacturer shall be responsible for replacing any item received in damaged condition at no cost to the Customer. This includes all shipping costs for returning non-functional items to AOS for replacement. This must be done within a reasonable time, seven to fourteen days, from receiving the product.

2.9 When the Customer places an order for products, installation, training, and maintenance with AOS they shall pay the price that is indicated in the contract.

2.10 The Customer may make advance deposits/payment for hardware maintenance and software maintenance (upgrades/new releases/technical support-type agreements) only.

3. **Single Point of Contact:**

3.1 AOS must function as the single point of contact for the Customer, regardless of any subcontract arrangements for all products and services. This shall include assuming responsibility and liabilities for all problems relating to all hardware, software and services provided.

4. **Pre-Sales Support:**
4.1 AOS' account management team shall provide pre-sales design to the Customer to allow the Customer to process an order, including, but not limited to, current and new product information, and product pricing. Once AOS has provided enough pre-sales design and engineering support for the Customer to place an order, AOS may charge for any additional on-site design and engineering support, if approved by the

Customer. The contract must provide pre-sales design and engineering support on-site, by telephone, and by email.

4.2   Telephone and email pre-sales design and engineering support: AOS will provide all telephone and email responses to pre-sales design and support requests within a reasonable amount of time after requested by the Customer.

4.3   On-site pre-sales design and engineering support: It shall be at the Customer's sole discretion to determine whether on-site pre-sales design and support is necessary. If the Customer determines on-site pre-sales design and engineering support is necessary, AOS must notify the Customer before any billable on-site pre-sales support is performed. AOS must utilize the firm, fixed professional service rates identified herein for all billable pre-sales support provided.

5.   Installation:

5.1   AOS may provide installation services for new systems upon request by the Customer. If the equipment is considered to be user-installable, AOS may provide installation assistance (e.g. telephone support), if requested.

6.   Training:

6.1   AOS does not provide formal training.

7.   Warranty:

7.1   AOS must provide the available warranties from Manufacturers. Warranties shall commence upon delivery and acceptance at the Customer facility.

8.   Delivery:

8.1   Customer is responsible for shipping unless the Regional AOS President authorizes FOB included for a project, a purchase or a specific Customer.

8.2   Expedited Shipping: Expedited freight charges are a result of the Customer requesting expedited shipping (e.g. overnight, 2nd day service, etc.). Any such requests shall be in writing from the Customer and will be billed to the Customer.

8.3   Delivery Timeframes: AOS must deliver all products within thirty (30) calendar days after the contractor's receipt of a properly authorized purchase order unless the timeframe specified on the vendor website or as quoted to the Customer by the account management team at the time of order indicates otherwise.

8.4   AOS must notify the Educational Entity of a later delivery date should the actual delivery days exceed that which was previously specified. The Customer must authorize the late delivery, cancel the order, or modify the order to reflect an acceptable product substitution. Any such authorizations shall be in writing.

　　a.   Damaged Product: The shipping company, Manufacturer or Distributor shall be responsible for replacing any item received in damaged condition at no cost to the Customer. This includes all shipping costs for returning non-functional items to AOS for replacement.

9. Account Management:

9.1 AOS must provide current product and pricing information to Customer through an account management team. AOS shall assign an account management team to the Customer to ensure adequate oversight and ample support in assisting the Customer's needs.

9.2 Account Management Team: The account management team must consist of knowledgeable sales specialists who are reasonably available in all locations of the Customer where the Customer maintains a presence.

9.3 Product/Pricing Assistance: The account management team must be able to assist Customer in obtaining product information, availability, pricing, and answering general questions about product compatibility, usability, etc.

9.4 Team Accessibility: The account management team must be accessible by both telephone and email between the hours of 8 a.m. and 5 p.m. Central Time, Monday through Friday, excluding holidays.

10. Pricing:

10.1 Product and Maintenance Pricing: AOS shall invoice the Customer for all products provided under the contract based upon a firm, fixed discount off of the contract. Each quotation must include, at a minimum, the following information:

- Date the quote is generated;
- Appropriate Customer information (i.e. Customer number/identifier, address, etc.);
- Product description;
- Requested product quantity;
- Product unit price; and
- Quotation total price.

10.2 Professional Services Pricing: AOS shall invoice the Customer for all services provided under the contract in accordance with the pricing in the contract.

10.3 Spot pricing is allowed under this contract. Spot pricing must meet or exceed discounts listed in this contract.

10.4 This contract has a Cooperative Purchasing Clause which allows other Educational Cooperatives, School Districts, Universities and Municipalities- any authorized Public Sector entity, to utilize this contract.

11. Order Processing:

11.1 Order Information: Except as otherwise noted in herein, the Customer shall generate a purchase order based on product quotes obtained from the account management team or through product/pricing information obtained via the contractor's website. The Customer shall specify, at a minimum, the following information:

- Contract number;
- Order number;
- Customer number/identifier (if applicable);
- Customer contact (Educational Entity's name, contact person [two (2) individuals if possible] and phone numbers);
- Contract line item number;
- Quantity;
- Unit price; and

- Any pertinent information relating to the product(s) and/or services requested (including brand/model, options, and any required services).

11.2   Submittal of Order: AOS must accept orders in via mail, e-mail or fax.

11.3   Acknowledgement of Receipt of Order: AOS must provide written acknowledgement (email or fax) to the Customer within twenty-four (24) hours of the receipt of authorized purchase order.

11.4   Order Substitutions: AOS shall not substitute any item(s)/component(s) ordered by a Customer until the contractor: 1) notifies the Educational Entity in writing (email is acceptable if the designated contact has an email address, and 2) receives written approval from the Customer to proceed with the substitution.

11.5   Substitution Authorization: The Customer reserves the right to accept any proposed substitution offered by AOS on the order; however, the Customer shall be final authority as to the acceptability of substitutions and reserves the right to accept or reject any substitution.

11.6   Substitution Approval Form: AOS must provide a form for CUSTOMER's to use to indicate their approval of a product substitution prior to the contractor's shipment of the substituted goods. This approval may be executed via email, fax, or hardcopy mail/delivery.

12.   Product and Maintenance Invoicing and Payment:

12.1   Generation of Invoice: AOS shall generate an invoice to the ordering Educational Entity which shall be itemized in accordance with the items listed on the purchase order. Terms are Net 30.

13.   Lease/Financing Program Requirements:

13.1   The Customer reserves the right to enter into lease/purchase financing agreement(s) as a result of the subsequent contract(s). In the event a using Educational Entity requests financing of their purchase under the contract a mutually agreeable lease schedule shall be entered into between the Customer and the lessor. The Customer shall initiate a contract amendment for every lease exercised under the contract that shall include the specific terms and rates of the lease. AOS at a minimum must have the ability to work with Cisco Capital and its financing partners to the benefit of the Customer. The Customer acknowledges that a contract assignment may be necessary as part of any lease exercised under the subsequent contract.

13.2   Should you have any questions about Leasing, please contact AOS.

13.3   A purchase order must be submitted to AOS by the leasing company and should identify in detail, the items being purchased and leased by the Customer.

REQUIRED PRICING

Hardware and Software – responses are indicated with the <u>discount percentage</u> off Manufacturer's List Price

Cisco Hardware	40% orders under $6,000.00 Education: 42.25% orders over $6,000.00 See Cisco Matrix
Cisco Maintenance	30% for Education/ 20% for Government
EMC Hardware	27% for Mid-tier, See EMC Matrix_____
EMC Software	27% Enterprise and Mid-Tier, see EMC Matrix ___
VMware	Education: 40% off Standard List; Other Public Sector based upon Volume discount, then Cost plus 10%
Citrix	Education: 40% off EASY List Pricing- See Matrix for other Public Sector entities
VCE VBlock	_____30%_____
Axis Cameras	_____20%_____
HP Hardware	WSCA Contract pricing (WSCA Purchases are under WSCA contract) - Spot pricing for large projects exceed the published WSCA price and are purchased under the CSD Contract.
Liebert Hardware	30% off PSS, PSA, PSI, GXT/GST2U,Nfinity, NX 10-30 kVA, Rack Enclosures: Knurr, Foundation MCR and Liebert XDF. Single Monitoring Products to support Single Phase UPS' in this list. 20% Non-Channel Products: CRV, NX 40-200 kVA 3 Phase, APM and Liebert Services sold at time of sale. 5% off Liebert Services if not included with Product Sale
MobileIron MDM	Education: 30% Other Public Sector: 25% See MobileIron Pricing Matrix

Entities that want to purchase off of this contract will sign a Letter of Notification which will notify CSD, AOS and the manufacturers of the Customer's intent to utilize this Contract with a Cooperative Procurement allowance.

Hourly Service Rate – responses are indicated with the <u>hourly dollar amount</u> of the service listed (AOS provided Services)

Help Desk	_____ $80.00_____
Project Management	_____ $130.00_____
System's Engineer	_____ $135.00_____
Senior System's Engineer	_____ $165.00_____
Design Architect	_____$165.00_____
System's Consultant (Including **k12itc**)	_____$195.00_____
Practice Vice President	_____$235.00_____
SharePoint Portal Developer	_____$145.00_____
SharePoint Portal Architect	_____$155.00_____
SharePoint Portal Consultant	_____$175.00_____

Data Center and Managed Services – responses are indicated with the <u>dollar amount</u> per unit specified in <u>monthly rates</u>

Blackboard as a Service   ___$13.35 members CSDGKC/ $13.60 non-members annually per user

Cloud:
Virtual Server

$ ___40.00_____ per CPU
$ ___20.00_____ per GB RAM
$ ___100.00_____ per VM / Management
(Monitor/Management/Patching/Antivirus)

Physical Server
Example: Dual CPU Quad Core and 24GB RAM
$700.00_____ per Server

Virtual Desktops

$30.00_____per user
(1cpu, 2GB per user) (In addition to base Virtual infrastructure and storage required) (Including AV protection etc.)

Hosted Applications

$12.00_____ per application type and concurrent users

Backup

$ .70_____ per GB/ Avamar
$ .50_____ per GB / Data Domain
$ .35_____ per Agent / CommVault
$50.00_____ per managed host
(Solutions may require on-site nodes of application specific software agents at additional cost depending on requirements)

Storage

$ .60_____ per GB / Performance
(SAN 15K RPM, RAID 5)
$ .50_____ per GB / Dev/Test
(SAN SAS Drives, RAID 5)
$ .35_____ per GB / Archive
$ 50.00_____Tape Services
$ 5.00 @1000 users_____   per user GB / Oxygen Cloud
(Dropbox like functionality with Security and central control)

Network

$ 100.00 @ min 5 vLANs_____   per vLAN / Number of vLANs required
$ 40.00_____   per port / Network ports
$ 100.00 @ min 5 vLANs_____per vLAN / Managed Firewall
$ 26.00 @ min 35 devices   per device / Network Monitoring
$ 20.00 @ min 100Mb_____   per Mb/ Internet Bandwidth
$ 100.00_____   per connection / SSL VPN
$ 500.00_____   per vLAN / Intrusion
Detection
$ 35.00_____   per App / Application monitoring
$ $330.00 Per MB   WAN Acceleration/ Optimization- This includes One
Optimization Appliance at both ends <u>utilizing SilverPeak</u>
$ 740.00_____   per Cabinet Two top of Rack Switches
$ 5.00 a user_____   per Server or App / Spam
Filtering

Co-Location:

$ 750.00_____   per STD Cabinet
$ 850.00_____   per Wide Cabinet

Data Center and Managed Services (continued) – responses are indicated with the <u>dollar amount</u> per unit specified in <u>monthly rates</u>

$ <u>200.00</u>   per KW / Power
$ <u>5.00</u>   per IP / Additional Public IP addresses
$ <u>Standard Cabinet and Power +20%, minimum of 10 cabinet commitment</u>
         per sq/ft and per KW / Private Data Center Suite

Educational Services provided by Herdman Consulting and AOS

Design, deployment and assessment of 1:1 and BYOD programs including:
- o   Professional Development Planning
- o   Establishing Goals, Objectives, and Program Evaluations
- o   Infrastructure Readiness Assessments and Gap Analysis to Support the Program
- o   Maintenance and Support Planning
- o   Device Selection and Deployment Recommendations
- o   Financial Planning and Strategies to Support the Initiative
- o   Communication, Orientations, and Policy Development

Technology planning and integration with district strategic plans
District analysis and recommendations of systems to reduce IT operating costs, improve system efficiencies, and best K-12 practices
Multi-year guidance, analysis and recommendations for all areas including but not limited to:
- o   Data Center operations
- o   Power and Cooling
- o   Desktop virtualization
- o   Emergency equipment procurement
- o   Data Protection and offsite replication
- o   Networks
- o   Security

Disaster recovery, virtualization, and cloud computing analysis and recommendations
Variety of assessments and operational guidance in the Business continuity, cloud, virtualization and storage infrastructure arena's to meet your long term district goals.
Assessment, planning, and training of student information systems, ERP software and data-driven decision making tools
- o   Analysis of existing environment readiness.
- o   Long-range planning and new solution pilot capabilities
- o   Environment testing and development for unique integration testing
- o   Interface design and coordination between existing and new technologies
- o   Software user interface assistance and tools via a data/development team.

Developing online learning, virtual, and video rich environments
Hourly Rate for above services $235.00*
Daily Rate for above services $1,640.00*
*Plus incurred expenses- travel, hotel, meals… if any.

EMC Pricing Matrix

Discount Class	Product Categories	
Class A	Hardware – Enterprise (Symmetrix)	48.00%
Class B	Hardware – Mid-Tier (CLARiiON, Celerra, Centera)	27.00%
Class C	Hardware – Connectrix	38.00%
Class PH	Hardware - Data Domain High End	27.00%
Class PM	Hardware - Data Domain Mid Range	27.00%
Class PE	Hardware - Data Domain Entry Level	19.00%
Class UM-H	Hardware - Unified Mid Tier (VNX)	27.00%
Class D1	Software - Enterprise Platform	27.00%
Class D2	Software - Mid Tier Platform	27.00%
Class D3	Software - Multi-Platform/Open	27.00%
Class DH	Software - Data Domain High End	27.00%
Class DM	Software - Data Domain Mid Range	27.00%
Class DE	Software - Data Domain Entry Level	19.00%
Class UM-S	Software - Unified Mid Tier (VNX)	27.00%
Class E	EMC Avamar Hardware	19.00%
Class F	Professional Services	14.00%
Class I	Training / Education Services	0.00%
Class SP	Hardware Maintenance - Data Domain	14.00%
Class SS	Software Maintenance - Data Domain	14.00%
Class J	AX4 and NX4, Insignia-Retrospect, RSA Storage	14.00%
Class K	EMC Select (Bus Tech Hardware/Software)	19.00%
Class UE	Hardware/Software Unified Entry Level (VNXe)	14.00%
Class R1	RSA Hardware/Software	11.00%
Class R2	RSA Root Signing	0.00%
Class RS-G	RSA Hardware/Software Maintenance	0.00%
Class NW-HW	RSA NetWitness Hardware	6.00%
Class NW-SW	RSA NetWitness Software	10.00%

Class NW-HW Maint	RSA NetWitness Hardware Maintenance	5.00%
Class NW-SW Maint	RSA NetWitness Software Maintenance	5.00%
Class NW-ED/TRN	RSA NetWitness Training and Education	5.00%
Class NW-SW ProSrv	RSA NetWitness Professional Service	5.00%
Class IS-SW	EMC Isilon Software	15.00%
Class IS-HW	EMC Isilon Hardware	15.00%
Class IS-ACC	EMC Isilon Accessories	4.00%
Class IS-SPT	EMC Isilon Support (HW & SW)	4.00%
Class IS-SRVC	EMC Isilon Professional Services	0.00%
LP MNT	Hardware & Software Maintenance	0.00%
LP WARR	Warranty Upgrades	0.00%

Citrix Pricing Matrix

Legacy EASY	Open-A	Open-B	Open-C	Open-D/**Education**
Initial Order	$150,000	$300,000	$600,000	$1 MM
Term	3 years	3 years	3 years	3 years
Re-Order1(min)	$5,000	$5,000	$5,000	$5,000
Renewal 2 (min)	$75,000	$150,000	$300,000	$500,000
RenewalTerm3:	2years	2 years	2 years	2 years
Discount	25%	30%	35%	40%
PlusOne (min) Upgrade Order5	$225,000	$450,000	$650,000	$875,000

Cisco Pricing Matrix

Additional Discounts for the following are in place until Cisco discontinues Special Pricing for these categories:

UCS	Additional 8% discount
Legacy Tandberg	Additional 2% discount
Government	Spot Pricing to match the Missouri State Contract for Government if working exclusively with AOS on the project. Minimum order of $6,000.00 still applies unless AOS approves and exception to the minimum purchase requirement.

MobileIron Pricing Matrix

On Prem Perpetual Licenses		
Band A	50 to 1000	
Product	List	Discount off list
MI-AM-ANY-PERP	75	25.00%
MI-CUSTCAREPREMIUM-ANY		
MI-CUSTCARE-ANY		
Band B	1,001 to 3000	
MI-AM-ANY-PERP	75	27.00%
MI-CUSTCAREPREMIUM-ANY		
MI-CUSTCARE-ANY		
Band C	3,001 to 5,000	
MI-AM-ANY-PERP	75	30.00%
MI-CUSTCAREPREMIUM-ANY		
MI-CUSTCARE-ANY		
Band D	5,001+	
MI-AM-ANY-PERP	75	35.00%
MI-CUSTCAREPREMIUM-ANY		
MI-CUSTCARE-ANY		
Ongoing perpetual license purchases bought in 500 device increments		
MI-AM-ANY-PERP	75	20.00%
MI-CUSTCAREPREMIUM-ANY		
MI-CUSTCARE-ANY		

Connected Cloud	24 month subscription	
Band A	50 to 1,001	
MI-Cloud-AM-ANY-24	96	25.00%
Band B	1,001 to 3000	
MI-Cloud-AM-ANY-24	96	27.00%
Band C	3,001 to 5,000	
MI-Cloud-AM-ANY-24	96	30.00%
Band D	5,001+	
MI-Cloud-AM-ANY-24	96	35.00%

Ongoing Connected Cloud subscriptions bought in 500 device increments		
MI-Cloud-AM-ANY-24	96	20.00%

On Prem Subscription	24 month subscription	
Band A	50 to 1,001	
MI-Cloud-AM-ANY-24	96	25.00%
Band B	1,001 to 3000	
MI-Cloud-AM-ANY-24	96	27.00%
Band C	3,001 to 5,000	
MI-Cloud-AM-ANY-24	96	30.00%
Band D	5,001+	
MI-Cloud-AM-ANY-24	96	35.00%
Ongoing subscriptions bought in 500 device increments		
MI-Cloud-AM-ANY-24	96	20.00%

Additional Charges		
MI-VAPPL-ANY	$0	0%
MI-VAPPLSENTRY-ANY	$0	0%
MI-APPL-ANY	$5,000	0%
MI-APPLSENTRY-ANY	$5,000	0%
MI-SETUP-ANY	$3,000	0%
MI-PSBASIC-ANY	$6,000	0%
MI-PSADVANCED-ANY	$8,000	0%

Letter of Notification to Utilize Cooperating School Districts of Greater Kansas City IT Contract

Re: Cooperating School Districts of Greater Kansas City Contract

Date: August 1, 2012

This letter serves as notification that we the Customer intend to utilize the Cooperating School Districts of Greater Kansas City IT contract. We recognize that this was a publicly bid and awarded contract. There is a Cooperative Purchasing Agreement allowing all School Districts, Universities, Colleges and other Public Sector entities to take advantage of this contract pricing.

This letter is intended to notify:

- Manufacturer's on the Cooperating School Districts of Greater Kansas City IT Contract to work with AOS on the Customer's behalf.

- AOS to set aside the Administrative fee for the Cooperating School Districts of Greater Kansas City Consortium.

- Cooperating School Districts of Greater Kansas City of the Customer's expectation to utilize the Public purchasing contract.

We the Customer, when purchasing off the Cooperating School Districts of Greater Kansas City IT Contract, will put the Cooperating School Districts of Greater Kansas City contract number C062512 on our Purchase Order to help AOS track the Administrative Fee.

Respectfully,

_____ Customer's Name
_____ Customer Representative's Printed Name
_____ Customer's Signature
_____ Date
_____ Name of Education Consortium if applicable