CONTRACT

This contract made this ___1 8___ day of _May_____, 20_17_, by and between the City of Columbus, Ohio, acting by and through its Finance and Management Director, party of the First Part, and CDW Government LLC, 230 N. Milwaukee Ave., Vernon Hills, IL 60061, party of the second part.

In consideration of one (1) dollar received by **CDW Government LLC** "Contractor," Contractor hereby offers to sell to the City of Columbus, "Buyer," who shall have until May 31, 2020 to exercise this option to purchase, at the price and the terms set forth in the proposal which includes: Video Storage Specs (RFQ004361) – Attachment A, Equal Opportunity Clause – Attachment B, , CDW Government's Proposal for Video Storage – Attachment C, Video Storage Questions & Answers – Attachment D, and Negotiated Terms and Conditions for Video Storage – Attachment E.

Should the City exercise its option, the contractor agrees with the City of Columbus to furnish and deliver, at their own cost and expense, all the equipment, machinery and supplies set forth in the for mentioned attachments, according to the specifications and plans therefore, thereto attached.

IN WITNESS WHEREOF, the said parties have hereunto set their hands on the day and year written above.

CDW Government LLC

_____
Signature

___5/18/2017_____
Title

City of Columbus, Ohio
Purchasing Office

_____
Finance & Management Director as authorized by
Ordinance No. _1094-2017_____
Passed __May 1, 2017_

CONTRACT SIGNATURE AFFIDAVIT

(Must be completed when the individual signing the Contract is NOT an officer or Member of the Company.)

STATE OF: Connecticut

COUNTY OF: Fairfield

___Dario Bertocchi___, being duly sworn, deposes and says that he/she is

Director Program Sales
_____ of _CDW Government LLC_, a Corporation, LLC, or LLP organized and existing under
(Title)   (Company Name)

and by virtue of the laws of the State of _____IL_____, and having its principal office at

___230 N. Milwaukee Ave., Vernon Hills, IL 60061___
City, State, Zip Code

Affiant further says that he/she is familiar with the records, minute books and by-laws of

___CDW Government LLC___
(Company Name)

Affiant further says that __Dario Bertocchi__ is __Director Program Sales__
(Name of Person Signing Contract)   **(Title)**
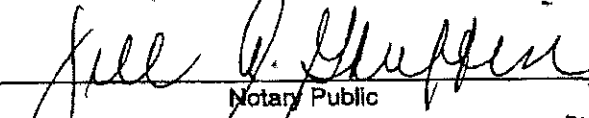
Of the Company and is duly authorized to sign the Contract for : __Video Storage UTC Contract - City of Columbus__

For said Company by virtue of __see attached signature authority letter__
(State whether the provision of by-laws or a resolution of the Board of Directors. If resolution, give date of adoption.)

_____
Signature of Affiant**

** **AFFIANT MUST BE SOMEONE OTHER THAN THE INDIVIDUAL SIGNING THE CONTRACT.**

Sworn to before me and subscribed in my presence this _18_ day of _May_ 20 _17_

_____
Notary Public

JILL A. GRIFFIN
NOTARY PUBLIC
State of Connecticut
My Commission Expires
May 31, 2019

My Commission Expires: _____

1

Appointment of Authorized Representative with Limited Signing Authority

In accordance with the authority delegated to the President of CDW Government LLC, pursuant to the Amended and Restated Limited Liability Company Agreement adopted by the Board of Mangers of CDW Government LLC (the "Company") on February 23, 2010, the undersigned, hereby delegates to Dario Bertocchi ("Authorized Representative") holding the title, Director, Program Sales ("Authorized Title"), of CDW Direct LLC, the authority solely to review and execute certain Contract documents, subject to certain limitations, as set forth in the table below ("Restricted Authority").

Contract Types	Agreements with customers to provide IT products and professional services (to the extent such services are authorized by the undersigned), but excluding proposals and bids for software beta test and early adoptee agreements, and any proposals and bids for agreements out of the ordinary course of CDW's business.
Territorial Limit	U.S. Only
Not to Exceed Dollar Value Limit	Up to $25,000,000. (This is total value, not annual value, of a contract.)
Not to Exceed Contract Duration for Services	Up to ten (10) year(s)
Required Approvals and Other Conditions	• Compliance with CDW Legal Department mandated contract review process. • Sr. Vice President Strategic Solutions and Services approval of any service contract with a term of 3 or more years. • Compliance with Company policies. • Capital expenditures approval, if applicable. • Chief Legal Officer review if Contract is with any principal stockholder, director or officer (or immediate family member) of a CDW Company. • Treasurer review of any grant of a security interest or lien. • Legal approval of any contract with a foreign entity.

Authorized Representative shall use the following signature block, or one that indicates in a substantially similar manner that the Authorized Representative is authorized when executing Contracts on behalf of Company:

CDW Government LLC

By:_____
Dario Bertocchi, its Authorized Representative

This appointment is effective on the date specified below and shall remain in effect until the earliest of : (a) the date, December 31, 2017, when this Restricted Authority expires; (b) the date when the Authorized Representative no longer holds the Authorized Title; or (c) the date when the Restricted Authority is terminated by the undersigned. Authorized Representative may not assign or delegate the Restricted Authority to any other person.

Effective Date October 1, 2016:

_____
Christina V. Rother
President, CDW Government LLC

Received and Approved by the Corporate Secretary's Office:

*ONE (1) HARD COPY <u>ORIGINAL</u> AND USB <u>FLASH DRIVE (Proposal with completed templates)</u> OF THIS BID MUST BE SUBMITTED

REQUEST FOR PROPOSAL (RFP)	**City of Columbus, Ohio** Purchasing Office 77 North Front Street, 5th Floor Columbus, Ohio 43215 614/645-8315

RFQ004361 / VIDEO STORAGE UTC
(Solicitation No.) / (Item)

TECHNOLOGY
(Department)

N/A
(Division)

Bid Opening Date and Time (due date and time)
Thursday, March 9, 2017 at 11:00 a.m. local time

Sealed proposals will be received by the Purchasing Office at 77 N. Front Street, 5th Floor, Columbus, Ohio 43215, until this date and time and then will be publicly opened and read. Proposals received after the opening time will be returned to the bidder unopened. The City will not be responsible for late mail or other deliveries.

NOTE: FAILURE TO RETURN THIS BID PROPOSAL INTACT MAY BE CAUSE FOR REJECTION.

Bid Proposal Submitted By:

Company Name

Street Address

City	**State**	**Zip**

YES / NO (circle one)

Federal I.D. No.	**Contract Compliance No.**	**E-Mail Address**

Contact Person	**Phone No.**	**Fax No.**

CONTACTS FOR INFORMATION
CONCERNING THIS BID PROPOSAL

RFQ No.: 004361

VIDEO STORAGE UTC

Title: _____

Department/Division or Agency: _____ TECHNOLOGY _____

CITY OF COLUMBUS PURCHASING OFFICE

Contact the following individuals on questions regarding specifications:

	<u>NAME</u>	<u>E-MAIL</u>
Procurement Specialist:	Antonio Beasley	aobeasley@columbus.gov
Secondary Contact:	R. Fred Myers	rfmyers@columbus.gov

EQUAL OPPORTUNITY CLAUSE

(1) The contractor/vendor/bidder will not discriminate against any employee or applicant for employment because of race, sex, sexual orientation, gender identity or expression, color, religion, ancestry, national origin, age, disability, familial status or military status. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, sex, sexual orientation, gender identity or expression, color, religion, ancestry, national origin, age, disability, familial status or military status. Such action shall include, but not be limited to, the following: employment up-grading, demotion, or termination; rates of pay or other forms of compensation; and selection for training. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices summarizing the provisions of this Equal Opportunity Clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that the contractor is an equal opportunity employer.

(3) It is the policy of the City of Columbus that business concerns owned and operated by M/WBEs shall have the maximum practicable opportunity to participate in the performance of contracts awarded by the city.

(4) The contractor shall permit access to any relevant and pertinent reports and documents by the ODI director for the sole purpose of verifying compliance with this Title and ODI regulations. All such materials provided to the ODI director by the contractor shall be considered confidential.

(5) The contractor will not obstruct or hinder the ODI director or his/her deputies, staff and assistants in the fulfillment of the duties and responsibilities imposed by Title 39 of the Columbus City Codes.

(6) The contractor and each subcontractor will include a summary of this Equal Opportunity Clause in every subcontract. The contractor will take such action with respect to any subcontractor as is necessary as a means of enforcing the provisions of the Equal Opportunity Clause.

(7) The contractor agrees to refrain from subcontracting any part of this contract or contract modification thereto to a contractor not holding a valid certification number as provided for in Title 39.

(8) Failure or refusal of a contractor or subcontractor to comply with the provisions of Title 39 may result in cancellation of this contract.

ALL CONTRACTORS MUST HOLD A VALID CONTRACT COMPLIANCE CERTIFICATION NUMBER ISSUED BY THE OFFICE OF DIVERSITY AND INCLUSION.

To obtain a Contract Compliance number register at the City of Columbus Vendor Services website: http://vendors.columbus.gov/sites/public

1. Login to the City of Columbus Vendor Services Site and register with the city of Columbus. Once that is completed and approved by the purchasing office, log back in and do the following:

2. Select **Questionnaires** from the Common menu located on the left navigation bar.

3. Next select EBO Quest. (this is the contract compliance application)

.4. Question 1 will be displayed; Answer question 1 and select **Forward**.

5. Proceed through the questionnaire answering each question and selecting **Forward** to continue. Once you have reached and answered the last question select **End** to submit.

6. Then the questionnaire will be received by the ODI Office, reviewed and process within 2 business days or less. For additional questions regarding this process, contact the Office of Diversity Inclusion at 614-645-4764.

City of Columbus Home Page: www.columbus.gov

CCDOC 1-2017

INFORMATION FOR OFFERORS (RFP)

SPECIAL CONDITIONS
Special conditions included in the specifications, if inconsistent with provisions included in "Information for Offerors (RFP)", shall take precedence over any provisions in "Information for Offerors (RFP)" to the extent inconsistent.

PERSONAL EXAMINATION
Offerors are required to satisfy themselves by personal examination of the proposed contract documents and investigation of the conditions at the site of the work in order that they may be fully informed of the contract requirements, the conditions existing, and the difficulties likely to be encountered in the execution of the work.

SUBMISSION OF RESPONSE
Refer to the "Proposal Information" section of the Specifications for instructions for submission.

All proposals and other material submitted in response to this Request for Proposal (RFP) become the property of the City of Columbus. The City may choose to retain or return these materials to the offeror, at the offeror's expense.

The City is not liable for any cost associated with the preparation of the proposal or any other costs incurred by any bidder prior to the execution of the contract. The rejection of any proposal in whole or in part, at it discretion, will not render the City liable for incurring any cost or damage.

If at any time prior to the closing date the invited offeror decides not to provide a proposal, the City will appreciate that a letter to that effect be supplied to the City prior to the deadline.

ACCEPTANCE AND REJECTION
This response submitted by the offeror to the City of Columbus will be accepted or rejected within a period of 180 days from due date. The City reserves the right to waive technicalities, and to cancel and renew the request on the required service. If more than one service, prices shall be quoted on the services requested. However, each service may be considered a separate offer and the City reserves the right to award a contract on each service separately or on all services as a whole or any combination thereof. Offerors whose proposal is made on an "All or None" basis must clearly state such fact in their written responses.

Each invitation for Bids, Request for Statements of Qualifications, and Request for Proposals issued by the City shall state that the Bid or Request may be cancelled and that any bid or proposal may be rejected in whole or in part when it is for good cause and in the best interests of the City.

WITHDRAWAL OF RESPONSE PROPOSALS
Offerors may withdraw their responses at any time prior to the time specified in the advertisement as the closing time for the receipt of responses. However, no offeror shall withdraw or cancel a proposal for a period of 180 calendar days after said advertised closing time for the receipt of the proposals.

SIGNATURE REQUIRED
The responses must be signed in ink. If the offeror is a firm or corporation, insert the corporate name followed by the signature of a person authorized to sign said response; if a partnership, indicate partnership name followed by the signature of one of the partners; if a sole proprietorship the signature of the owner is required. Where the person signing for a corporation is NOT an officer or Member of the Company, an affidavit or a resolution of the Board of Directors showing the authority of that person to bind the corporation must be furnished.

DEFAULT PROVISION
In case of default by the offeror or the contractor, the City of Columbus may procure the articles or services from other sources and hold the offeror or contractor responsible for any excess costs occasioned or incurred thereby.

CONTRACT AND BOND
The offeror to whom an award is made will be required to execute a written contract with the City of Columbus, Ohio within ten days after receiving such contract for execution, and if specified in the legal notice, furnish a good and approved bond conditioned upon the faithful performance of the same. The proposal, contract, proposal bond, (if applicable), and performance bond (if applicable) shall be in the form herein specified.

If, at any time during the continuance of the Contract, any surety shall, in the opinion of the contracting agent of the City, become irresponsible, then said agent shall have the right to require additional and sufficient surety or sureties. The Contractor shall furnish the surety or sureties to the satisfaction of the said agent, within ten (10) days after notice. In default thereof the default provision herein shall apply.

LIABILITY, INSURANCE, LICENSES AND PERMITS
Where offerors are required to enter or go onto City of Columbus property to deliver materials or perform work or services as a result of contract award, the offeror will assume full duty, obligation and expense of obtaining all necessary licenses, permits, and insurance when required. The offeror shall be liable for any damages or loss to the City occasioned by negligence of the offeror (or his agent) or any person the offeror has designated in the completion of his contract as a result of his response. Particular attention is directed to the statutory requirements of the State of Ohio relative to the licensing of corporation organized under the Laws of any other State.

TAXES
The City, being a municipality, is tax exempt and will provide appropriate artifact upon request. Federal and/or State Taxes are not to be included in prices quoted. The successful offeror will be furnished an exemption certificate if needed.

PRICING
Offerors are to quote firm or fixed prices for the duration of any contract, which may be a result of the proposal unless otherwise noted in the specifications. In case of discrepancy in computing the amount of the cost, the UNIT PRICE quoted will govern.

DELIVERY
Time will be of the essence for any orders placed as a result of this response. Purchaser reserves the right to cancel such orders, or any part thereof, without obligations if delivery is not made within the time(s) specified. Delivery shall be made during normal working hours and to the destination shown on the proposal.

INFORMATION FOR OFFERORS (RFP) (Continued)

CAMPAIGN CONTRIBUTIONS
Contractor hereby certifies the following: that it is familiar with Ohio Revised Code ("O.R.C.") Section 3517.13; that all applicable parties listed in Division (I)(3) or (J)(3) of O.R.C. Section 3517.13 are in full compliance with Divisions (I)(1) and (J)(1) of that Section; that it is eligible for this contract under the law and will remain in compliance with O.R.C. Section 3517.13 for the duration of this contract and for one year thereafter.

QUALITY
Unless otherwise stated by the offeror, the proposal will be considered as being in strict accordance with the specifications outlined in this RFP document.

SAMPLES
Samples, when requested, must be furnished free of expense to the City and if not destroyed, will upon request be returned at the bidder's expense.

CHANGES AND ADDENDA TO RFP DOCUMENTS
Each change or addenda issued in relation to this document will be published on the City's Vendor Services website no less than five (5) working days prior to the scheduled RFP due date. In addition, to the extent possible, c notice will be e-mailed to each person registered as having interest in the commodities selected for this RFP. Total RFP inquiry or specific item cancellations may be issued later than that time specified above.

REPUDIATION OF AGREEMENT
The liability of the City for repudiation of any agreement which might result from this request shall be limited to the difference between the market price at the time and place for tender of the service and the unpaid sales price together with any incidental damages, but less expenses paid in consequence of the breach by the City. The liability of the city shall not be measured by the profits or overhead of seller.

CONTRACT MODIFICATION
An agreement which may result from this request shall not be modified or altered by any subsequent course of performance between parties or by additional terms contained in any subsequent documents unless said additional or differing terms are incorporated by contract modification authorized to be entered into by ordinance.

APPLICABLE LAWS
The Revised Code of the State of Ohio, the Charter of the City of Columbus, and all City ordinances insofar as they apply to the laws of competitive bidding, contracts, and purchases, are made a part hereof.

REMEDIES
All claims, counterclaims, disputes and other matters in question between the City, its agents and employees, and the Contractor arising out of or relating to this agreement or its breach will be decided in a court of competent jurisdiction within the County of Franklin, State of Ohio.

OFFERORS TERMS AND CONDITIONS
Terms and conditions, submitted with this proposal, which are contrary to City Code or Charter shall be disregarded for the purpose of any subsequent contract. The successful offeror shall be notified as to which terms and conditions, if any, have been deleted or changed.

PUBLIC RECORDS REQUESTS
The City of Columbus, as a political subdivision of the State of Ohio, is subject to Ohio Revised Code Chapter 149, known as the Ohio Public Records Law. Consequently, the Offeror understands that ALL documents submitted in response to this RFP are considered public records and WILL be released when a public records request is made by news media, competitors, or other interested parties, in accordance with the law. If you contend that certain CLEARLY MARKED portions of your response constitute an exception to Ohio's public records law, you MUST submit your legal basis in support of that assertion with your response.

If a public records request is made for any portion of the documents that you have submitted and you have NOT clearly marked such documents as information constituting an exception to Ohio's public records law, your information will be released immediately.

If a public records request is made for such information and you HAVE clearly marked portions of your response as information constituting an exception to Ohio's public records law, AND you have submitted the legal basis supporting such claim, the City will release a redacted version of your information to the requestor and notify you that a request was made and that a redacted version of your response was released. Should the requestor indicate that the redacted version is not sufficient for their purposes, you then will be IMMEDIATELY responsible for obtaining an order from a Court of competent jurisdiction in Franklin County, Ohio enjoining release of your clearly marked information constituting an exception to Ohio's public records law.

If a public records request is made for such information and you HAVE clearly marked portions of your response as information constituting an exception to Ohio's public records law, but you have NOT submitted the legal basis supporting such claim, the City WILL RELEASE your information to the requestor and notify you that a request was made and that your response was released.

DO NOT mark your entire response/submittal as information constituting an exception to Ohio's public records law. If your entire response/submittal is so marked, the City of Columbus will not consider your offer.

COSTS INCURRED FOR PROPOSAL SUBMISSIONS
The City is not liable for any cost associated with the preparation of the proposal or any other costs incurred by any offeror prior to the execution of the contract. The rejection of any proposal in whole or in part, at it discretion, will not render the City liable for incurring any cost or damage.

WITHDRAWL OF PROPOSALS
If at any time prior to the closing date the invited offeror decides not to provide a proposal, the City will appreciate that a letter to that effect be supplied to the City prior to the deadline.

CITY IS TAX EXEMPT
The City, being a municipality, is tax exempt and will provide appropriate certification upon written request.

SAFETY REQUIREMENTS
Successful vendor shall at all times while performing duties, adhere to all rules of their particular industry, with regard to mandates by the Environmental Protection Agency (EPA) and/or Occupational Safety and Health Administration (OSHA), and any other regulation applicable to the circumstance.

-3A-

NON-COLLUSION AFFIDAVIT
Each respondent is required to submit with his proposal an affidavit stating that neither he nor his agents, nor any other party for him, has paid or agreed to pay, directly or indirectly, any person, firm or corporation any money or valuable consideration for assistance in procuring or attempting to procure the Contract herein referred to, and further agreeing that no such money or regard will be hereafter paid. This affidavit must be on the form required, titled "Non-Collusion Affidavit."

ADDITIONAL CONTRACT TERMS AND REQUIRED DOCUMENTS IN THE EVENT OF A CONTRACT

This section sets forth contract terms and the required contract documents that the successful offeror must execute following the award of the contract by the contracting authority.

PUBLICATIONS
The Contractor agrees to submit to the City's Contract Administrator all advertising, sales promotion, and other publicity matters relating to this Contract wherein the City's name is mentioned or language used from which the connection of the City's name therewith may, in the City's judgment, be inferred or implied. The Contractor further agrees not to publish, or use such advertising, sales promotion, or publicity matter without the prior written consent of the City except that may be required under law.

TERMINATION FOR CONVENIENCE
The City upon thirty days written notice may terminate this agreement at its convenience. The party providing goods or services shall be entitled compensation for goods provided or services rendered under the terms of this contract up to the date of notification of termination.

TERMINATION FOR DEFAULT
If either the City or the Contractor violates any material term or condition of this Contract or fails to fulfill in a timely and proper manner its obligations under this Contract, then the aggrieved party shall give the other party written notice of such failure or violation. The responsible party shall give the other party written notice of such failure or violation. The responsible party will correct the violation or failure within thirty (30) calendar days or as otherwise mutually agreed. If the failure or violation is not corrected, this Contract may be terminated immediately by written notice from the aggrieved party to the other party. The option to terminate shall be the sole discretion of the aggrieved party. If it determined for any reason the failure to perform is without the defaulting party's control, fault, or negligence, the termination shall be deemed to be a Termination for Convenience.

APPLICABLE LAW, REMEDIES
This agreement shall be governed in accordance with the laws of the State of Ohio. All claims, counterclaims, disputes and other matters in question between the City, its agents and employees, and the Contractor arising out of or relating to this agreement or its breach will be decided in a court of competent jurisdiction within the County of Franklin, State of Ohio. The remedies provided for in this Contract shall not be exclusive but are in addition to all other remedies available under law.

ASSIGNMENT
This agreement may not be assigned or otherwise transferred to others by the contractor without the prior written consent of the City.

SAVE HARMLESS
Contractor shall protect, indemnify and save the City harmless from and against any damage, cost, or liability, including reasonable attorneys' fees resulting from claim, by third parties for any or all injuries to persons or damage to property arising from the acts or omissions of the Contractor, its officers, employees, agents, or Subcontractors in providing goods or services under the terms and conditions of this contract.

SAVE HARMLESS DISCLOSURE OF PROPRIETARY INFORMATION
The Contractor agrees to indemnify and hold harmless the City of Columbus, Ohio and their respective officials, employees and other agents and representatives, against loss, claim, liability in tort or by statute imposed, charge, cost or expense, including without limitation, attorneys fees to the extent permitted; by law, which may be incurred in connection with, or in any manner of any damage or loss arising from disclosure of proprietary information.

PROPRIETARY INFORMATION INDEMNIFICATION
The Contractor agrees to indemnify and hold harmless the City of Columbus, Ohio and their respective officials, employees and other agents and representatives, against loss, claim, liability in tort or by statute imposed, charge, cost or expense, including without limitation, attorneys fees to the extent permitted; by law, which may be incurred in connection with, or in any manner of any damage or loss arising from disclosure of proprietary information.

CONFIDENTIAL INFORMATION
The director of the agency requesting proposals may choose to keep RFP information in confidence during the evaluation process and until the time a contract is executed. This information may include all proposal documentation, notes, including detailed prices, references, resumes, technical and cost information, etc. Thereafter, proposals and all submissions will become public information, as the City is subject to R.C. 149.43, the Public Records Act.

CONTRACTOR'S PROPRIETARY INFORMATION
Contractor acknowledges that the City is subject to chapter R.C.149.43, the State of Ohio Public Records Law. The City agrees to keep any information confidential except as otherwise required to be disclosed by law including but not limited to the contract.

INDEPENDENT CONTRACTOR STATUS
The Contractor shall perform its duties as an independent contractor and not as an employee. Neither the contractor nor any agent or employee of the contractor shall be or shall be deemed to be an agent or employee of the City of Columbus. The Contractor shall pay when due all required employment taxes and income tax on any monies paid pursuant to the contract. Contractor shall acknowledge that the contractor and its employees are not entitled to unemployment insurance benefits unless the contractor or a third party provides such coverage and that the City does not apply for or otherwise provide such coverage. Contractor shall have no authorization, express or implied, to bind the City to any agreements, liability, or understanding except as expressly set forth in the contract. Contractor shall provide and keep in force worker's compensation (and show proof of such insurance) and unemployment compensation insurance in the amounts required by law, and shall be solely responsible for the acts of the contractor, it's employees and agents.

Revised 1-23-2017

IN THE EVENT OF A CONTRACT (continued)

PROTECTION OF CITY'S CONFIDENTIAL INFORMATION

The contractor shall acknowledge that some of the material and information which may come into its possession or knowledge in connection with the contract or its performance, may consist of confidential information, the disclosure of which to, or use by, third parties could be damaging. Therefore, access to information concerning individual recipients of the City's services to individual clients, among other items, shall not be granted except as authorized by law or agency rule. The contractor shall agree to hold all such information in strictest confidence, not to make use thereof for other than the performance of the contract, to release it only to authorized employees or subcontractors requiring such information, and not to release or disclose it to any other party. The contractor shall agree to release such information or material only to subcontractors who have signed a written agreement expressly prohibiting disclosure. The contractor shall further agree to either destroy or return all such information at the end of the term of the contract.

This section does not impose any obligation on the contractor if the information is: (1) publicly known at the time of disclosure; (2) already known to the receiving party at the time it is furnished to the contractor; (3) furnished by the City to others without restrictions on its use or disclosure; or (4) independently developed by the receiving party without use of the proprietary information.

WITHHOLDING OF CITY INCOME TAX

Pursuant to Section 361.34 Columbus City Codes, 1959: "Said Contractor hereby further agrees to withhold all City income tax assessment due or payable under the provisions of Chapter 361, Columbus City Codes for wages, salaries and commissions paid to its employees and further agrees that any of its subcontractors shall be required to agree to withhold any such City income tax assessments due under said chapters for services performed under this Contract."

WORKER'S COMPENSATION INSURANCE

The contractor shall take out and maintain, during the life of the contract, adequate worker's compensation insurance for all his employees employed at the site of the project and, in case any work is sublet, the contractor shall require the subcontractor similarly to provide worker's compensation insurance for the latter's employees, unless such employees are covered by the protection afforded by the contractor. The contractor shall furnish three (3) copies of the worker's compensation certificate showing that the contractor has paid his industrial insurance premium.

AUTHORITY TO BIND

The signatories to this Contract represent that they have the authority to bind themselves and their respective organizations to this Contract.

PUBLIC LIABILITY INSURANCE

The contractor shall take out and maintain during the life of the contract, such public liability (bodily injury and property damage) insurance as shall protect him from claims from damages for personal injury, including accidental death, as well as from claims for property damage which may arise from operations under the contract, whether such operation be by himself or any subcontractor or by anyone directly or indirectly employed by either of them. Such insurance policy shall include the City as named insured. The contractor shall maintain coverage of the types and in the amounts specified below. Proof of such insurance coverage shall be evidenced by submitting a certificate of insurance. A contractor's "umbrella" type policy with limits specified below may be submitted for this requirement with the City as named insured.

The amount of such insurance shall be as follows:

Bodily Injury Liability:

Each Person	$1,000,000.00
Each Accident	1,000,000.00

Property Damage Liability:

Each Person	$1,000,000.00
All Accidents	1,000,000.00

Such insurance shall remain in full force and effect during the life of the contract.

Insurance may not be changed or cancelled unless the insured notifies the City in writing not less than thirty days prior to such change or cancellation. If any part of the contract is sublet, the contractor is responsible for the part sublet being adequately covered by insurance hereinabove described.

Contractor assumes all risk of loss and damage to the equipment provided unless loss or damage occurs at the time the operator and equipment are being operated for the purpose designated by the City and such loss or damages is caused by an act of the City or its employee which constitutes gross negligence or wanton misconduct

CITY OF COLUMBUS / DEPARTMENT OF TECHNOLOGY
VIDEO STORAGE
P R O P O S A L

1. SCOPE AND CLASSIFICATION

1.1. **Scope:** The City of Columbus, Ohio is soliciting Proposals (hereon referred to as RFP) pursuant to Columbus City Codes from experienced Storage Array Original Equipment Manufacturers, or their authorized value-added resellers or dealers, to procure and install Video Storage for Police Body-Worn Cameras (BWC), Dash Cameras (DC) and other video-related data of the Department of Public Safety, and managed by the Department of Technology on their behalf. The proposed contract will be in effect through December 31, 2019.

1.2. **Classification:** This proposal is to provide the City of Columbus, Department of Technology (DoT) with a Universal Term Contract (UTC) to purchase software, licenses, media, and/or equipment. The City may purchase any item(s) or group of like item(s) in the price list from the successful bidder after a purchase order for the listed items is issued.

1.2.1. **Specification Questions:** In order to enable accurate communication in respect to this RFQ/RFP, to provide offerors the opportunity to seek clarification on any matters pertaining to the RFQ/RFP requirements, and to enhance the offerors understanding of the City's needs, questions regarding this bid must be submitted on the Vendor Services portal no later than 4:00 p.m. (local time) on Monday, February 13, 2017 Responses will be posted on the RFQ on Vendor Services no later than 5:00 p.m. (local time) on Tuesday, February 21, 2017. Please reference the Vendor Service User Guide available at the City of Columbus Vendor Services portal http://vendors.columbus.gov/sites/public for further instructions on how to submit "Vendor Questions" through the vendor portal on page 16 section "Add Vendor Questions. Registration, certification and information on navigating our website is included in the Vendor Services User Guide. Note: Proposals will not be accepted electronically through the portal.

1.2.2. All Offerors and their proposed subcontractors shall have valid City of Columbus Contract Compliance Numbers (CC#).

2. APPLICABLE PUBLICATIONS AND STANDARDS
2.1. N/A

3. REQUIREMENTS

3.1. **General Information:**

3.1.1. **Contract Term:** The proposed contract shall be in effect from the date of a purchase order (PO) certified by the City of Columbus, City Auditor up to and including December 31, 2019.

3.1.2. **Annual Extension:** Subject to mutual agreement, the period covered by the ensuing contract, under the same terms and conditions stated therein can be extended for two additional year terms, or portion thereof, at the same pricing and the same escalator clause.

3.1.3. **Pricing:** No price increase shall be granted during the first two years of an awarded contract. Thereafter, price increases may be negotiated as part of any annual extension. While the bidder should include their purchase, installation and maintenance costs for their proposed solution, the City is interested in consumption based purchase options. If available the successful bidder should provide financing options for consumption based pricing using Storage as a Service, On-Premise Cloud, or Capacity on Demand approach.

3.1.4. **Non-Disclosure:** The Offeror agrees that no information will be disclosed to third parties or published in case studies, advertisements, white papers, customer testimonials, etc. without the express written consent of the City. For the purposes of future discussion around the successful bidder's roadmap, the City may request the successful bidder to sign a mutual non-disclosure agreement typical of industry at a future point in time. The City reserves the right to review vendor bids with paid agents of the City (ie Gartner).

3.1.5. General Security Clause:
    3.1.5.1.   Please note: In the performance of this project, it may be necessary for the Offeror to have access to non-public and/or security records that belong to the City. The City intends to require appropriate confidentiality agreements to protect such records from disclosure by the winning Offeror(s).

    3.1.5.2.   With any vendor hosted solution, the City of Columbus and the City of Columbus, Division of Public Safety will retain sole ownership of all data. The use or dissemination of any record or recordings by the selected Offeror or anyone affiliated with the Offeror is strictly prohibited; without the written consent of the City of Columbus, Division of Public Safety.

3.1.6. **Revision to the Proposal:** All the submittals will be regarded as public records with the exception, to the extent permitted by law, of those parts of each submittal which are noted by the Consultant as business or trade secrets and plainly marked as "Confidential". City will notify Offeror within 10 business days of receipt of request for records will be released. Consultant is not allowed to mark the entire proposal as "Confidential". Any items marked as "Confidential" require a separate letter addressing the reason why the information is to be considered confidential.

4. **RFQ Overview:** The Offeror's response to this RFP should be a clear and concise description of the Offeror's capabilities and proposed service offerings. The RFP will be evaluated using (1) the competence of the Offeror to perform the required services as indicated by the technical training, education and experience of the Offeror's personnel who would be assigned to perform the work; (2) the quality and feasibility of the Offeror's technical proposal; (3) the ability

of the Offeror to perform the required service competently and expeditiously as indicated by the Offeror's workload and the availability of necessary personnel, equipment and facilities; (4) past performance of the Offeror as reflected by evaluations of the city agency, other city agencies, and other previous clients of the Offeror with respect to such factors as quality of work, success in controlling costs, and success in meeting deadlines; (5) cost; Each of these factors are to be responded to in the manner described herein.

4.1. **Process Summary:** The City will appoint an evaluation committee to evaluate proposals received. The committee will evaluate all Offerors and proposals received and rank the Offerors based upon the evaluation criteria specified in the RFP (Appendix A). The committee may then select three (3) or more of the highest qualified Offerors with which to hold additional discussions. The discussions may include, but are not limited to, presentations by the Offerors to the committee to elaborate upon their qualifications, proposals, and/or other pertinent information. Based upon the content of the proposals received including any revisions thereto, and upon any additional discussions with the Offerors the committee shall rank the remaining Offerors based upon the evaluation criteria specified in the RFP. The committee shall submit its ranking of the Offerors along with a written explanation to the Department of Technology, Director's office. The Department of Technology Director and the Department of Public Safety Director shall select the Offeror(s) with which to enter into contract negotiations. If negotiations fail, The City reserves the right to enter into contract negotiations with another Offeror.

4.2. **RFP Sequence of Events:** The following RFP sequence of events represents the City's best estimate of the schedule that will be followed. Exact times for questions / answers (in Section 1.2.1 and in Section 5) and due date (on the RFP cover page) are noted in this document and will be published on Vendor Services website and in the City Bulletin

   4.2.1. RFP Issued

   4.2.2. Deadline for written questions: approximately 11 days after RFP issued

   4.2.3. City response to questions: approximately 6 days after question deadline

   4.2.4. RFP Due: approximately 14 days after question responses published

   4.2.5. Notification of finalists: approximately 15-20 days after RFP received

   4.2.6. Presentations to City: approximately 15-20 days after RFPs received

   4.2.7. Negotiations begin: approximately 10-15 days after presentations

   4.2.8. Contract completed: approximately 60 days after completed negotiations

   4.2.9. Contract Commencement: week of April 16, 2017, with **a mandatory completion date of May 15, 2017.** Training may occur during implementation or within 7 business days after the completion of the implementation.

5. **SPECIFICIATION QUESTIONS and ANSWERS:** Specific questions concerning the RFP requirements are be submitted *electronically* before 4:00 PM **(EST) Monday February 13, 2017.** Written questions shall be submitted via the vendor portal at: http://vendors.columbus.gov/sites/public. Questions submitted via any other form shall not receive a response.

5.1. Written electronic responses will be prepared by the City of Columbus and published at the link noted above. Responses will be published no later than **February 21, 2017,** close of business. This will ensure accurate, consistent responses are provided to all potential Offerors.

5.2. **COMMUNICATIONS:** During the bidding and evaluation process, Offerors are strictly prohibited from communicating with any City employees or officers regarding this solicitation except through the method stated immediately above during the Question & Answer Period. Any communication from the vendor to the City after the Question & Answer period should be limited to only what is necessary. Necessary communication required by the City will be communicated clearly to Offerors. If any Offeror has a need to communicate with the City, the communication should come only to the City of Columbus, Vendor Services portal. If a City employee attempts to communicate with an Offeror contrary to this provision, the Offeror shall report said incident to the City of Columbus, Purchasing Office. In violation of this section on the part of the Offeror will lead to disqualification in accordance with sections 329.28 of Columbus City Codes, 1959. Any agreement or contract entered into will be in accordance with the provisions of Chapter 329, of Columbus City Codes, 1959, standard agreements rules and regulations.

5.3. **SUBMITTAL INSTRUCTIONS:** Proposals in hard copy and on removable flash drives SHALL be submitted to the City of Columbus, Purchasing Office, 77 N. Front Street, Columbus, Ohio 43215. Proposals shall be limited to **eighty (80) single-sided pages,** please no binders. Submissions shall be labeled with the RFQ number and name. All pricing information will be provided in unprotected Excel spreadsheet format. Non-pricing information to be provided in Microsoft Word, Excel or PDF format. Proposals shall include a cover letter, which is to include the following information:

5.3.1. Shall be in the form of a standard business letter and must be signed by an individual authorized to legally bind the Offeror;

5.3.2. Shall include a brief executive summary of the solution the Offeror plans to provide and how it meets the City's requirements.

5.3.3. A statement regarding the Offeror's legal structure (e.g., an Ohio Corporation), Federal tax identification number, and principal place of business;

5.3.4. A list of people who prepared the Proposal, including their titles

5.3.5. Proposals in excess of the eighty (80) page limit shall be **rejected and returned** and will not considered for award. Submittals **must** be received by the City's Purchasing

Office no later than **11:00 a.m. (EST) on Thursday, March 9, 2017** in order to be considered for award. Late submittals will not be accepted

6. PROJECT DESCRIPTION

6.1. Standardized Terminology: Within this document the following terms are defined:

6.1.1. **Tier 1:** High-speed storage; typically, flash memory or solid state drive.

6.1.2. **Tier 3:** Mechanical storage; typically, 7200rpm near-line SAS drive.

6.2. General Information and Purpose: The City of Columbus is the 15th largest city in the United States and the largest city within the State of Ohio. The focus of this Request for Proposal is for the City to acquire a purpose-built storage array for the City's Body-Worn Camera (BWC), Dash Camera (DC), and other programs that store video. The storage arrays acquired through this procurement will store video from BWC, DC and potentially other video sources.

6.3. Body Worn Cameras (BWC): The City's vendor of record for body-word cameras is WatchGuard Video (http://watchguardvideo.com/).

6.3.1. The City's BWC program includes a phased implementation beginning in December 2016 and reaching full-scale implementation by December 2018. The BWC implementation will occur in multiple phases or groups lasting approximately 3 months in duration. When fully implemented the video storage will store video for approximately 1,500 body-worn cameras for both on-going production and data retention purposes.

6.3.2. The successful Offeror's systems will provide storage to ingest, manage and store video files from WatchGuard's Vista© body-worn camera system(s) in an on-site storage environment at the City's primary and secondary data centers located in Columbus, Ohio

6.4. Dash Cameras (DC): The City's vendor of record for dash cameras is Insight Public Sector for Panasonic's Arbitrator System (http://business.panasonic.com/arbitrator/evidence-collection-systems.html). This system includes a vehicle-based video management system with two cameras; one forward and the other rear-facing.

6.4.1. The City currently has installed 248 Arbitrator systems. This includes 190 older systems and 58 newer systems. Older models include the AG-CPD20 system and the new model is the WJ-VR30. AG-CPD20 systems are capable of recording up to 720x480 pixels at 30 frames per second and require approximately 1GB per hour to store at this quality. New models record at 1920 x 1080 or 1028 x 720 pixels of resolution in H.264 Format. AT 1028 x 720 pixels the estimated storage amount is 1.89 to 2.00 GB per hour. Current Arbitrator consumption as of 12/21/2016 is 156.6TB with

consumption growing on average over a 75-week period at an average of 85% of a TB per week.

6.4.2. The City currently has DC video from the Panasonic Arbitrator system stored on an existing storage array. The City expects to move this video to the storage array acquired through this RFP.

6.4.3. The successful Offeror's system will provide storage to ingest, manage and store video files from Panasonic's Arbitrator© dash camera system(s) in an on-site storage environment at the City's primary and secondary data centers located in Columbus, Ohio.

6.5. Public Records Video:

6.5.1. Pursuant to the Ohio Revised Code, the City currently fulfills properly submitted public records requests for video to the public.

6.5.2. Current practice includes copying requested video to a DVD and then storing a duplicate copy in a DVD archive.

6.5.3. The successful Offeror's system shall provide integrated file management capabilities that allow the City to manage and move files between the Offeror's on-premises system installed at the City's locations and Microsoft Azure, Amazon, or other public cloud provider's locations. The successful Offeror shall demonstrate this capability in their response, and may be asked to demonstrate this functionality in a presentation to the City.

6.5.4. The City may purchase cloud storage from an external provider via the contract with the successful Offeror, or may purchase storage from a cloud provider via another contract with the cloud provider separate from this RFP and resultant contract. The Offeror may optionally submit pricing for cloud-based storage on a per gigabyte (GB) monthly basis for 12, 24, 36, 48, 60 and 72 month terms.

7. OBJECTIVES

7.1 Body-Worn Cameras

7.1.1. To acquire a multi-tiered high performance, low cost and highly scalable system of storage for ingesting, managing and retaining body-worn camera video for the City.

7.1.2. The high-performance tier (Tier-1) will include high speed storage of video ingested from body-worn cameras on a daily basis; once ingested on a 24-hour cycle, videos stored on Tier-1 will be moved by the WatchGuard video management system to Tier-3 storage.

7.1.3. The low-cost storage tier (Tier-3) will retain BWC video according to the City's video data categorization retention schedules.

7.1.4. Video reaching the end of its stated retention schedule will be deleted or removed from the storage array, including potential storage in the public cloud (Amazon AWS, Microsoft Azure, etc.)

7.1.5. The City desires a resilient and redundant storage solution for both Tier-1 and Tier 3 storage

7.1.6. The BWC portion includes two phases:

Phase A: Includes the design of Tier-1 and Tier-3 storage for the entire BWC program, and the acquisition and installation of a portion of Tier-1 storage and Tier-3 storage for calendar year 2017.
Phase A will also include moving BWC video files from the city's existing storage array to the newly acquired video array.

Phase B: Includes the acquisition and implementation of an additional Tier-1 storage and Tier-3 storage for calendar year 2018 if necessary.

The City desires a scalable approach with on-going monitoring and incremental capacity on a periodic basis via a capacity on-demand, on-premises cloud, or storage as a service or similar approach.

While actual BWC storage requirements will be adjusted in Phase A and B based on actual versus estimated consumption per the above, total estimated required useable storage for the purposes of this RFP range from a low to high estimate of:

Tier-1	Low Estimate	High Estimate
Phase A	10 TB's	16 TB's
Phase B	10 TB's	16 TB's
Total A+B	**20 TB's**	**32 TB's**

Tier-3	Low Estimate	High Estimate
Phase A	1,000 TB's	3,500 TB's
Phase B	500 TB's	3,500 TB's
Total A + B	**1,500 TB's**	**7,000 TB's**

7.2 Dash Cameras

7.2.1 To acquire a low cost and highly scalable system of storage for ingesting, managing and retaining dash camera video for the City.

7.2.2 The low-cost storage tier will retain dash camera video ingested according to the City's video data categorization and retention schedules.

7.2.3 Video reaching the end of its stated retention schedule will be deleted or removed from the storage array, including potential storage in the public cloud (Amazon AWS, Microsoft Azure, etc.).

7.2.4 The City desires a resilient and redundant storage solution for Tier 3 storage. This RFP includes two phases:

Phase A: Includes the design of Tier-3 storage for the entire DC program, and the acquisition and installation of a portion of Tier-3 storage for calendar year 2017. Phase A will also include moving DC video files from the city's existing storage array to the newly acquired video array.

Phase B: Includes the acquisition and implementation of an additional Tier-3 storage Tier-3 storage for calendar year 2018 if necessary.

The City desires a scalable approach with on-going monitoring and incremental capacity on a periodic basis via a capacity on-demand, on-premises cloud, or storage as a service or similar approach.

While actual DC storage requirements will be adjusted in Phase A and B based on actual versus estimated consumption, total estimated required useable storage for the purposes of this RFP range from a low to high estimate of:

Tier-3	Low Estimate	High Estimate
Phase A	157 TB's	313 TB's
Phase B	86 TB's	172 TB's

7.3 Total Storage

7.3.1 To acquire a low cost and highly scalable system of storage for ingesting, managing and retaining body worn and dash camera video for the City.

As indicated above, the city desires a scalable approach with on-going monitoring and incremental capacity on a periodic basis via a capacity on-demand, on-premises cloud, or storage as a service or similar approach.

The total storage requirements below are for estimating purposes only and show a range of growth for the system in the first (2017) and second (2018) years of the program until steady-state is achieved.

7.3.2 Total storage for BWC and DC as described below by combining the two sections above.

7.3.3 Total storage for BWC and DC as described below by combining the two sections above.

Tier-1	Low Estimate	High Estimate
Phase A	10 TB's	16 TB's
Phase B	10 TB's	16 TB's
Total A+B	**20 TB's**	**32 TB's**

Tier-3	Low Estimate	High Estimate
Phase A	1,150 TB's	3,800 TB's
Phase B	600 TB's	3,700 TB's
Total A + B	**1,750 TB's**	**7,500 TB's**

7.4 Environment Overview

7.4.1   The City owns and maintains both a primary and secondary data center. The City owns a private-fiber network which includes dual 10Gbps Ethernet connections between its two data centers over separate (dual entrance) circuit paths.
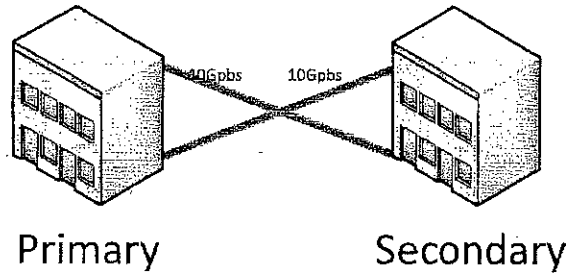
Figure 1: Data Center Network Configuration

The proposed storage solution shall include redundant 10Gbps Ethernet (10Base-SR using LC connectors) Interfaces.

The City utilizes a variety of data architectures to provide resiliency among its two data centers. This includes active-passive configurations and use of load balancing, storage replication and extensive use of server virtualization technologies.

7.4.2   The primary focus of this RFP is to support WatchGuard's Evidence Library Architecture. Evidence Library in an n-tier video management application which includes Client, Middleware and Server Tiers.

7.4.2.1   **The City will deploy WatchGuard's Evidence as Windows services on multiple Microsoft Windows 2012 servers.**

7.4.2.2   Client operating system tiers include use of web browsers and WatchGuard's Desktop Client which is compiled for use with Microsoft Windows clients.

7.4.2.3   Middleware applications include Microsoft SQL Server 2008 R2-2014 or 2014 Standard, Microsoft Internet Information Server (IIS) on Microsoft Windows 2008 R2 64-bit or 2012 R2. Directory services (authentication and authorization) is provided by Microsoft Active Directory/Lightweight Directory Services.

7.4.2.4   Server applications including: DVR communications, host services, import services, job queuing, web site and security are built on Microsoft .Net Framework version 4.5 ASP.NET MVC and Microsoft Windows 2012 R2 64-bit

7.4.3 The City intends to run the WatchGuard Evidence Architecture on VMware vSphere ESXi version 6.x hypervisors and associated VMware application programming interfaces (APIs) and software development kits (SDKs).   Additional applications require support for the following hypervisors and their associated APIs or SDKs.

7.4.3.1   Key applications that will utilize the video storage array include WatchGuard Evidence Library 4.1.1. Redaction software for the BWC and DC programs is Ikena Spotlight by MotionDSP.

7.4.3.2   The City's current storage environment utilized for video is an EMC Isilon storage array. BWC and DC video initially stored on this array will be moved to the successful Offeror's video array platform.

8. **SCOPE OF SERVICES**
    8.1. **STORAGE:** The primary objective for this RFP is to acquire a purpose-built video storage solution for body-worn cameras, dash cameras, and other video-related data. Various factors determine total storage requirements for the entire project which include: Video Resolution, Hours of Use, Retention Length, Ratio of Evidentiary to Non-Evidentiary Video, and Type of Storage.

    8.1.1. Actual storage consumption will be determined over the planned implementation of the program in the twenty-four (24) month period between January 1, 2017 and December 31, 2018.

    8.1.2. Storage procurement will be split into Phase A and Phase B. Actual consumption over Phase A of the program will inform on-going storage requirements for incremental purchase in Phase A and additional purchase for Phase B if necessary.

    8.1.3. Factors influencing total video storage requirements include:

    8.1.3.1.   **Video resolution**: WatchGuard and the current Arbitrator solutions are capable of compressing video in MPEG-4 format using various 480p and 720p compression settings at different bit rates. Phase A will store recorded video in

720p or High Def Medium format at 1.89 gigabytes(GB) per hour or recorded video.

8.1.3.2. **Hours of Use:** Initial estimates for daily video recordings per officer shift (a 7.5 to 8 hour work day) are for 5 hours of recording per shift.

8.1.3.3. **Retention Length:** Video recorded by officers during their shift is categorized as evidentiary or critical and non-evidentiary or routine. Critical video is retained for 730 days whereas Routine video is retained for 30 days.

8.1.3.4. **Ration of Evidentiary to Non-Evidentiary Video:** Since retention length is determined by video type, the ration of Critical to Routine video will have an impact in storage size requirements. An increase in video categorized as Critical, increases storage requirements, whereas an increase in video categorized as Routine decreases storage requirements.

8.1.4. **Tier-1 Storage:** Serves as ingress for BWC videos uploaded from remote police stations across the City's private fiber network. All locations where BWC will be uploaded will eventually be connected at 10GBPS Ethernet. When the project reaches full-scale at approximately 1,500 body-worn cameras in the field spread across 24 police locations, with approximately 4,283GB of data per day across three police shifts to be written across the network to the Tier-1 storage network. WatchGuard recommends minimum IOPS for the Tier-1 array of no less than 10,000 IOPS. The successful bidder shall demonstrate how their Tier-1 array architecture is designed to provide a rate of transfer of 20,000 IOPS or higher.

8.1.5. Data Resiliency (also known as Disaster Avoidance)

8.1.5.1. The array shall incorporate disaster avoidance within the array using RAID or similar technology such that the failure of a drive or other portion of the array will not result in a loss of data.

8.1.5.2. The City desires an active-passive configuration between the primary and secondary data centers. This configuration will use array based replication or other technology such that the failure of an array at the primary site will not result in data loss.

8.1.6. Recovery Point Objectives and Recovery Time Objective Requirements:

8.1.6.1. Recovery Point Objectives: 24 hours or less

8.1.6.2. Recovery Time Objectives: 4 hours or less

8.1.7. Storage Array Users

8.1.7.1. Officers: At full-scale approximately 1,500 officers will upload video from their BWCs to the storage array on a 24-hour cycle.

8.1.7.2.   Department of Public Safety, Division of Police video staff: Initially five (5), full-time equivalent will review all BWC video on an on-going basis. Reviews will include use of redaction software and case-management of video for evidentiary purposes.

8.1.7.3.   City of Columbus, City Attorney's Office

8.1.7.4.   Franklin County, Ohio Prosecutor's Office

8.2. SOLUTION ARCHITECTURE AND PLATFORM

8.2.1. Offeror should provide an architectural solution overview, including:

8.2.1.1.   A high-level architecture to include a description of the solution being proposed.

8.2.1.2.   An explanation of how the solution will support the organization's existing software portfolio, Service Level Agreements (SLAs) and operational procedures.

8.2.1.3.   An identification of any restrictions or capacity limitations regarding what services can run on given platform(s) in the proposed solution.

8.2.1.4.   An identification of any storage efficiency feature restrictions related to the applications being hosted on the proposed solution.

8.2.1.5.   An identification of how requisite performance will be delivered in the proposed solution.

8.2.1.6.   A description of how growth is accounted for in the overall system design (scalable solution e.g., scale-out versus scale-up). Identify how much capacity can be added to the proposed installation.

8.2.1.7.   An identification of how high availability is accomplished (i.e., fault tolerance, self-healing, self-repairing, non-disruptive repair and upgrade activities) with the proposed solution.

8.2.1.8.   A description of the approach to deploying the storage array in hybrid cloud environments.

8.2.1.9.   An identification of whether all proposed hardware are new (unused) and the latest models are in current production, including an explanation for any deviations.

8.2.1.10. Describe the life-cycle process of the hardware chosen.

8.2.1.11. A summary of the key differentiating aspects of your solution versus other leading vendors.

8.2.2. Storage Array Functionality
8.2.2.1. Capacity Scalability

8.2.2.1.1. The solution must support seamless addition in capacity. Identify the following characteristics of the proposed solution:

8.2.2.1.1.1. Maximum storage capacity a single array can support

8.2.2.1.1.2. Maximum usable capacity

8.2.2.1.1.3. Type of Disk subsystem: Maximum number of physical hard-disk drives/solid-state drives (HSSs/SSDs) per system. Provide detailed response by drive type and size.

8.2.2.1.1.4. Maximum size of a file system

8.2.2.1.1.5. Number of snapshots file system and per system

8.2.2.1.2. The array must support non-disruptive expansion of any logical volume in the system

8.2.2.1.3. Describe any methods used to maintain adequate performance levels as the proposed solution scales in capacity.

8.2.2.1.4. Describe methods available that facilitate minimal scaling of storage administrative personnel as the array scales in capacity.

8.2.2.2. Efficiency
8.2.2.2.1. Is this provisioning supported?

8.2.2.2.1.1. Describe the general process used to perform thin provisioning

8.2.2.2.1.2. Describe the performance impact of the thin provisioning feature and any restrictions in the thin provisioning design. Specifically, describe storage tiers and third-party applications that should or should not utilize thin provisioning.

8.2.2.2.2. What type of data reduction (compression, deduplication, etc) support by protocol is offered to enhance storage efficiency? Please describe your options for:

8.2.2.2.2.1. Deduplication

8.2.2.2.2.2.   Compression

8.2.2.2.3.   Describe the automated storage-tiering capabilities offered by the system to enhance performance and reduce costs.

8.2.2.2.3.1.   Describe whether these features can be turned off or provisioned for all or a portion of the storage array.

8.2.2.2.3.2.   Describe the ability of the system to configure and manage flash as second-level cache.

8.2.2.2.3.3.   What enhancements have been made to data reduction features in your product to take advantage of flash?

8.2.2.2.3.4.   Describe any other differentiating or highly innovative features compared to leading competitors. Include whether these features are proprietary or not.

8.2.2.3.   Interoperability and Ecosystem
8.2.2.3.1.   The following OS must be supported by the storage array

8.2.2.3.1.1.   Apple Mac OS 10.x.x

8.2.2.3.1.2.   Microsoft Windows 2008 R2 and newer

8.2.2.3.1.3.   Oracle Linux Server 6.x

8.2.2.3.1.4.   Red Hat Enterprise Linux 5.x or newer

8.2.2.3.1.5.   Hadoop File Management System

8.2.2.3.2.   The following host protocols must be supported

8.2.2.3.2.1.   iSCSI, FCoE, NFS, CIFS, Ethernet (on an as-needed basis, REST/HTTP and/or Infiniband may be included). Please specify versions and speeds supported.

8.2.2.3.3.   Array must support 10GB Ethernet (10Base-SR using LC connectors) with dual 10GB interfaces.

8.2.2.3.4.   Please list the third-party independent software vendors (ISVs) that you have integrated with for backup/recovery. Provide specific details on snapshots and replication integration.

8.2.2.3.5.   Please list the third-party ISVs that you support for archiving and any specific array-level features that help in the integration.

8.2.2.3.6.   Are you providing agents that tightly integrate with the following products for the purposes of simplifying archiving, backups and DR testing, and for improving failback, recovery point objectives and RTOs? Specify the versions that you support:

    8.2.2.3.6.1.   CommVault Simpana
    8.2.2.3.6.2.   EMC NetWorker
    8.2.2.3.6.3.   Microsoft Exchange
    8.2.2.3.6.4.   Microsoft SQL Server
    8.2.2.3.6.5.   Microsoft Hyper-V
    8.2.2.3.6.6.   Oracle Database
    8.2.2.3.6.7.   Red Hat KVM
    8.2.2.3.6.8.   Symantec Enterprise Vault
    8.2.2.3.6.9.   Symantec NetBackup
    8.2.2.3.6.10.   VMWare ESXi

8.2.2.3.7.   Describe the integration of your solution with cloud management platforms. Specifically, does your solution support APIs provided by cloud management platforms (such as VMWare vCloud Suite, Microsoft System Center or OpenStack)?

8.2.2.3.8.   Do you provide support for any public cloud APIs (such as Amazon S3 API, OpenStack Swift or CDMI)?

8.2.2.4.   Manageability

8.2.2.4.1.   The array must support syslog, Simple Network Management Protocol (SNMP) traps, email and/or "Call-Home" notification. Provide an overview of how this is securely enabled.

8.2.2.4.2.   The array must support online configuration of alert threshold, severity level and notification method for each type of event.

8.2.2.4.3.   Describe array management options:

    8.2.2.4.3.1.   GUI-based single pane of management console
    8.2.2.4.3.2.   CLI
    8.2.2.4.3.3.   Security features: SSL, SSH, and others
    8.2.2.4.3.4.   Audit log

8.2.2.4.4.   The array must be able to generate capacity reports that contain the below information:

    8.2.2.4.4.1.   Total raw capacity

8.2.2.4.4.2.   Total usable capacity

8.2.2.4.4.3.   Percentage of allocated capacity

8.2.2.4.4.4.   Percentage consumed and subscribed for thin pools

8.2.2.4.4.5.   Total usable capacity per directory tree

8.2.2.4.4.6.   Time/Date incremental growth progression on a per directory
tree basis

8.2.2.4.5.   The array must be able to generate performance reports that contain the information below:

8.2.2.4.5.1.   CPU utilization

8.2.2.4.5.2.   Cache utilization

8.2.2.4.5.3.   Usage over time (historical)

8.2.2.4.5.4.   Internal/External communications

8.2.2.4.5.5.   Front-end director utilization

8.2.2.4.5.6.   Back-end director utilization

8.2.2.4.5.7.   Hot spots and heat map

8.2.2.4.5.8.   Server to HDD visibility of IOPS

8.2.2.4.6.   Describe problem determination capabilities to identify and isolate performance issues or bottlenecks by individual users, files, volume groups, ports or any other structures. Are such reports graphical user interface (GUI) or command-line interface (CLI)-based?

8.2.2.4.7.   Describe the auto-configuration features that exist to ease set-up, configuration and operations

8.2.2.4.8.   Describe any tools you offer to automate the storage provisioning process. Elaborate on integration with third-party orchestration software.

8.2.2.4.9.   What capabilities are built into the system for secure multi-tenancy, self-service and metering?

8.2.2.4.10.   Can capacity chargeback reports be generated?

8.2.2.4.11.   Describe the support that exists for monitoring of performance metrics, capacity and hardware healthiness on the SAN infrastructure.

8.2.2.4.12.   What quality of service (QoS) features does your system support, and at what level of granularity?

8.2.2.4.13.   Can real-time storage performance reports be generated? If so, what granularity?

8.2.2.4.14.   Can capacity trending reports be generated for the purpose of capacity planning?

8.2.2.4.15. Describe the support that exists for ad hoc reports and the type of customization that is possible.

8.2.2.5. **Performance**

8.2.2.5.1. **Tier-1:** The proposed storage array must be able to meet the below-mentioned IOPS, throughput, and response time requirement.

8.2.2.5.1.1. Peak IOPS of "20000" with a response time < "20" ms without cross-site data replication.

8.2.2.5.1.2. The array must support non-disruptive disk, disk enclosure, cache, front-end and back-end adapter upgrade.

8.2.2.5.1.3. Must be able to apply firmware upgrades in a non-disruptive manner and the rollback options of firmware and software upgrades.

8.2.2.5.1.4. The storage array must have a complete cache protection mechanism such as a battery or similar in the event of power loss.

8.2.2.5.1.5. Describe the process of rebuilding data on a failed HDD or SDD. Specifically, how is the spare drive identified, and how is the user notified? Also, describe any capability to accelerate the rebuilding process and provide a range of rebuild times by HDD or SSD capacity.

8.2.2.5.1.6. What is the guaranteed availability (four nines, five nines, or six nines)?

8.2.2.5.1.7. What is the time required to perform a successful, non-disruptive microcode update?

8.2.2.5.1.8. What fault isolation techniques exist to ensure high availability?

8.2.2.5.1.9. Describe the inbuilt protection techniques for preventing data corruption

8.2.2.5.1.10. Describe the replication features available in your product and elaborate on your support for different replication methodologies.

8.2.2.5.1.11. Outline the various techniques that are available to reduce network bandwidth consumption during replication.

8.2.2.5.1.12. Explain how data corruption exposures are minimized during replication

8.2.2.5.1.13.   Describe the snapshot capabilities, clearly outlining the product features and differentiators

8.2.2.5.1.14.   What is the maximum number of snapshots that can be handled within the storage array?

8.2.2.5.1.15.   What is the maximum number of snapshots per LUN or volume?

8.2.2.5.1.16.   Describe how snapshot restore can be effected and any integration with third party software

8.2.2.5.1.17.   Describe in detail the disaster recovery process of the proposed solution. Also, specifically answer the following questions:

8.2.2.5.1.17.1.   What is the range of RTOs and RPOs supported?
8.2.2.5.1.17.2.   At what distance is the solution provided?
8.2.2.5.1.17.3.   What is the performance impact of your solution?
8.2.2.5.1.17.4.   What, if any, is the average data loss associated with your solution?

8.2.2.5.1.18.   Describe any other resiliency features not mentioned above that make your storage array more resilient or specific features available only with your product.

8.2.2.5.2.   Tier-1
8.2.2.5.2.1.   The proposed storage array must be able to meet the below-mentioned IOPS, throughput and response time requirement.

8.2.2.5.2.1.1. Peak IOPS of "20000" with a response time < "20" ms without cross-site data replication.

8.2.2.5.2.1.2. Peak IOPS of "20000" with a response time of < "30" ms with cross-site data replication.

8.2.2.5.2.1.3. Must deliver an aggregated throughput of "600" MB/s as a cluster of per-node basis.

8.2.2.5.2.2.   The system must meet the following IOPS, throughput requirements "18,456" respectively in the next "5" year period.

8.2.2.5.2.3.   The system latency must be less than "30" ms during the "5" year period.

8.2.2.5.2.4.   Describe the ability to perform priority input/output (I/O) control for critical applications.

8.2.2.5.2.5.   What is the highest customer aggregate throughput achieved so far by a node (for a scale-out architecture) or a cluster/namespace (for a scale-up architecture)?

8.2.2.5.2.6.   Provide independent performance benchmark data (such as SPC-1 or SPEC SFS) for IOPS, throughput, response time. Please provide full information, including the year of testing, model number, configuration and workloads.

8.2.2.5.3.   Tier-3
8.2.2.5.3.1.   The proposed storage array must be able to meet the below-mentioned IOPS, throughput and response time requirement:

8.2.2.5.3.2.   Peak IOPS of "10000" with a response time < "20" ms without cross-site data replication.

8.2.2.5.3.3.   Peak IOPS of "10000" with a response time of < "30" ms with cross-site data replication.

8.2.2.5.3.4.   Must deliver an aggregated throughput of "300" MB/s as a cluster of per-node basis.

8.2.2.5.3.5.   The system must meet the following IOPS, throughput requirements "6,152" respectively in the next "5" year period.

8.2.2.5.3.6.   The system latency should be less than "30" ms during the "5" year period.

8.2.2.5.4.   Availability
8.2.2.5.4.1.   There must be no single point of failure (SPOF) within the storage array. Individual component failures (controller, port, cache, disk, enclosure, or any other vendor specific element) should not cause loss of data accessibility, data integrity, or a full array failure.

8.2.2.5.4.2.   All hardware repair activities must be non-disruptive.

8.2.2.5.4.3.   The array must support non-disruptive disk, disk enclosure, cache, front-end and back-end adapter upgrade.

8.2.2.5.4.4.   Must be able to apply firmware upgrades in a non-disruptive manner and the rollback options of firmware and software upgrades.

8.2.2.5.4.5.   The storage array must have a complete cache protection mechanism such as a battery or similar in the event of a power loss.

8.2.2.5.4.6.   Describe the process of rebuilding data on a failed HDD or SDD. Specifically, how is the spare drive identified, and how is the user

notified? Also, describe any capability to accelerate the rebuilding process and provide a range of rebuild times by HDD or SSD capacity.

8.2.2.5.4.7.   What is the guaranteed availability (four nines or five nines or six nines)?

8.2.2.5.4.8.   What is the time required to perform a successful, non-disruptive microcode update?

8.2.2.5.4.9.   What fault isolation techniques exist to ensure high availability?

8.2.2.5.4.10.   Describe the inbuilt protection techniques for preventing data corruption.

8.2.2.5.4.11.   Describe the replication features available in your product and elaborate on your support for different replication methodologies.

8.2.2.5.4.12.   Outline the various techniques that are available to reduce network bandwidth consumption during replication.

8.2.2.5.4.13.   Explain how data corruption exposures are minimized during replication.

8.2.2.5.4.14.   Describe the snapshot capabilities, clearly outlining the product features and differentiators?

8.2.2.5.4.15.   What is the maximum number of snapshots that can be handled within the storage array?

8.2.2.5.4.16.   What is the maximum number of snapshots per LUN or volume?

8.2.2.5.4.17.   Describe how snapshot restore can be effected and any integration with third party software?

8.2.2.5.4.18.   Describe in detail the disaster recovery process of the proposed solution. Also, specifically answer the following questions:

    8.2.2.5.4.18.1.   What is the range of RTOs and RPOs supported?

    8.2.2.5.4.18.2.   At what distance is the solution supported?

    8.2.2.5.4.18.3.   What is the performance impact of your solution?

    8.2.2.5.4.18.4.   What, if any, is the average data loss associated with your solution?

8.2.2.5.4.19.   Describe any other resiliency features not mentioned above that make your storage array more resilient or specific features available only with your product?

8.2.2.5.5.　Security

8.2.2.5.5.1.　The proposed solution must support hardware-based data encryption. Describe whether you provide native encryption or whether it is through third-party integration.

8.2.2.5.5.2.　The proposed storage provisioning, monitoring and resource management tools must support role-based access control (RBAC).

8.2.2.5.5.3.　The storage solution must be compliant with Criminal Justice Information Services (CJIS) requirement. How does your storage solution meet this requirement?

8.2.2.5.5.4.　What are the default roles that are provided in your solution?

8.2.2.5.5.5.　The proposed storage administration tools must be able to generate audit logs to keep track of user logons, unauthorized login attempts and the changes made by users.

8.2.2.5.5.6.　How access to the audit and system logs is securely implemented?

8.2.2.5.5.7.　Describe the access control settings outlining any integration with third-party LDAP/AD systems.

8.2.2.5.5.8.　Describe the support for third-party anti-malware software.

8.2.2.5.5.9.　Describe the capability to perform data erasure within the storage and explain the data erasure mechanism.

8.2.2.5.6.　General Software Requirements

8.2.2.5.6.1.　Offeror shall provide specific software versions recommended for each class of equipment, including release notes.

8.2.2.5.6.2.　Offeror shall include documentation regarding open bugs or issues in the software versions proposed, ordered by priority

8.2.2.5.7.　Physical Requirements

8.2.2.5.7.1.　Floor space to support the proposed solution

8.2.2.5.7.2.　Floor loading and elevation requirements

8.2.2.5.7.3.　Raised-floor requirements

8.2.2.5.7.4.　Minimum ceiling height

8.2.2.5.7.5.　Location of network interfaces (e.g., front, rear)

8.2.2.5.7.6.　Options for mass termination of cables

8.2.2.5.8. **Environmental Requirements**

8.2.2.5.9. System power circuit breaker panel location

8.2.2.5.10. Lighting requirements

8.2.2.5.11. Long- and short-term environmental ranges that the system can tolerate, including the:

    8.2.2.5.11.1. Acceptable temperature range

    8.2.2.5.11.2. Acceptable humidity range

    8.2.2.5.11.3. Acceptable particulate contaminant range

    8.2.2.5.11.4. Heat dissipation of the system at maximum configuration in British thermal units (BTUs) per hour

    8.2.2.5.11.5. Required airflow (front to back, left to right, etc.)
    8.2.2.5.11.6. Specialized rack requirements

8.2.2.5.12. **Power Requirements**

    8.2.2.5.12.1. Acceptable voltage and phase parameters ranges.

    8.2.2.5.12.2. Power requirements power connectors, and circuit breaker panel requirements.

    8.2.2.5.12.3. Recommendations for reserve power requirements in stand-by hours and battery capacity (ampere-hours), if an uninterruptible power supply (UPS) is proposed.

    8.2.2.5.12.4. Centralized and local power and cooling requirements.

8.2.2.6. **WARRANTY, MAINTENANCE, AND TRAINING**
    8.2.2.6.1. **Warranty**

    8.2.2.6.1.1. Offeror shall specify the warranty periods for all solution hardware, as well as the software associated with running the proposed systems and applications

    8.2.2.6.2. **Maintenance**

    8.2.2.6.2.1. The Offeror must quote maintenance on a contractual basis — indicating the annual maintenance costs, software fees, caps (i.e., annual increases in hardware maintenance rates and software license fees) and discounts after warranty expiration.

    8.2.2.6.2.2. The quotes for system maintenance options are to include:

8.2.2.6.2.2.1.1. Hardware support including part replacement and return merchandise authorization (RMAs)

8.2.2.6.2.2.1.2. Software support that entails new releases (including new features and/or bugs/vulnerability remediation)

8.2.2.6.2.2.1.3. General technical support/assistance with operational and maintenance activities

8.2.2.6.2.2.1.4. Advanced technical support for programmatic or highly customized configurations in support of specific services in the storage array

8.2.2.6.2.2.1.5. Define the number of factory-trained service technicians available through the local service depot (per physical data center location), and identify the centers from which technicians will be dispatched after hours, on holidays and during weekends.

8.2.2.6.2.2.1.6. Provide a copy of the standard maintenance contract and details of optional extras.

8.2.2.6.2.2.1.7. Describe committed response times and mean time to recovery (MTTR) by type of service disruption.

8.2.2.6.2.2.1.8. Provide a copy of normal maintenance escalation procedures, and include communications with affected parties — with names and contact details of all parties affected.

8.2.2.6.2.2.1.9. Provide emergency contact number if normal channels of fault-reporting communications fail. Describe how that emergency contact number will be answered and by whom:

8.2.2.6.2.2.1.9.1. Are there any times or restrictions by day, week or month on this service?

8.2.2.6.2.2.1.9.2. What information will those answering a call have available?

8.2.2.6.2.2.1.9.3. Will they have specific information on the system being proposed for the organization?

8.2.2.6.2.2.1.10. Describe the procedures for software updates and upgrades; detail what, if any, costs would be associated with upgrades.

8.2.2.6.2.2.1.11. Define major and minor alarm conditions and how the system responds to each circumstance.

8.2.2.6.2.2.1.12. Describe the capabilities for remotely monitoring the system.

8.2.2.6.2.2.1.13. Describe the capabilities for automatically reporting fault conditions, both to organizational and supplier personnel.

8.2.2.6.2.2.1.14. Indicate where the local and regional parts depots are located.

8.2.2.6.2.2.1.15. Provide an inventory of all spare parts, including pricing that will need to be maintained in on-site inventory.

8.2.2.6.2.2.1.16. Describe the process for migration during end of installed life and any safe data erasure capabilities.

8.2.2.6.3. Training

8.2.2.6.3.1. The successful Offeror will be required to provide vendor training to users and system management communities. The Offeror shall also provide pricing for alternative modes of training delivery, if available.

8.2.2.7. IMPLEMENTATION AND PROFESSIONAL SERVICES

8.2.2.7.1. Offeror shall describe how it will manage the transition from current state to target state, including migration/implementation plans and handoff, clearly identifying who will provide the necessary resources and who will pay for them.

8.2.2.7.2. Offeror shall include in their statement of work (SOW)

8.2.2.7.2.1. Provide an implementation plan

8.2.2.7.2.2. Description of the specific services to be delivered

8.2.2.7.2.3. Milestones for a successful implementation

8.2.2.7.2.4. Project plan for migrating files from existing to new environment, including work breakdown structure and a test/dev plan to ensure successful file transfer.

8.2.2.8. OFFEROR'S QUALIFICATIONS
8.2.2.8.1. Company History

8.2.2.8.1.1. A brief description of its company.

8.2.2.8.1.2. A description of its experience in providing storage solutions.

8.2.2.8.1.3. Evidence of financial stability with an annual report, Form 10-K or audited financial statement.

8.2.2.8.1.4. Name of the manufacturer of the proposed system.

8.2.2.8.1.5.   Name/location of a technical support center that provides remote maintenance.

8.2.2.8.1.6.   A list of other types of customer support available from the technical support center.

8.2.2.8.1.7.   At least three reference customers with similar requirements to the solution being proposed. Customer reference information must include company name and location, contact person, telephone number, email and the system name with model number.

8.2.2.8.1.8.   Customer references should include at least one from (1) the same market vertical of The City of Columbus (2) the same geographic region of the City of Columbus and (3) a recent deployment (during the past 12 months).

8.2.2.8.1.9.   The quantity and location of qualified personnel available to support the proposed solution.

8.2.2.8.1.10.   Provide a description for each labor classification to include minimum education and/or certifications, average years of experience, typical promotion track and typical responsibilities during a project. The DoT is especially interested in being able to differentiate between classifications with similar titles such as a Senior Project Manager and a Project Manager.

8.2.2.8.1.11.   Provide the maximum (cap) hourly rate for all labor categories for the following calendar years: 2017, 2018, and 2019. Actual tasks will either be fixed-fee based or direct-labor based on the actual labor rates of personnel performing work. In addition to the hourly rates, provide the Hourly Cost Multiplier (HCM) in percentage format that is to be used for the duration of the contract

8.2.2.8.2.   Responsibility for Proposed System Implementation

8.2.2.8.3.   The Offeror shall include a statement describing the terms of the agreement with the manufacturer(s) of the proposed solutions. The statement must define the distributor's authorized territory; note the current contract expiration date; and include a statement from the manufacturer agreeing to support the product, the distributor and the buyer for a minimum of seven years.

8.2.2.8.4.   If the RFP is from more than one party, such as a combined proposal from a manufacturer and a distributor or system integrator, then the accountabilities of each party must be spelled out clearly. The prime contractor and the account management structure proposed must be acceptable to the City of Columbus.

8.2.2.8.5. Offeror's Support and Structure

8.2.2.8.6. If the proposed system will function within a multisite, networked environment, then the bidder must explain its capability to provide regional and national support for multiple locations.

8.2.2.8.7. The Offeror shall describe the structure of its organization, with organization charts showing the executive, engineering, sales and field support (installation, service and training) entities within the company.

8.2.2.8.8. The Offeror shall state how many people it employs in each of the following job categories and whether they are employees or contractors:

    8.2.2.8.8.1. Project management

    8.2.2.8.8.2. Engineering support

    8.2.2.8.8.3. Customer service

    8.2.2.8.8.4. Device installation (could be hardware or virtual appliance)

    8.2.2.8.8.5. Training

8.2.2.8.9. Offeror shall:

8.2.2.8.9.1. Provide a copy of its most recent annual report, or at least a financial status statement including annual revenue, profit, net worth and other data.

8.2.2.8.9.2. Have a technical support center that provides remote maintenance.

8.2.2.8.9.3. Explain what other types of customer support are available from the technical support center.

8.2.2.8.9.4. Describe its standards and processes for providing emergency service

8.2.2.9. SYSTEM PRICING AND LICENSING

8.2.2.9.1. Offeror shall describe the pricing structure of the proposed solution and provide a bill of materials (BOM) that includes full and complete line item pricing for both the low and high estimates showing Phase A and Phase B along with the total for both phases separately utilizing the provided Excel Storage RFP Submittal Workbook (Appendix B). See the attached for additional information. Each FRU or stock-keeping unit (SKU) will include the

following column headings or fields even if the item is sold as part of a bundle:

8.2.2.9.2.   Manufacturer's Part number

8.2.2.9.3.   Part description

8.2.2.9.4.   List price

8.2.2.9.5.   Discount percentage

8.2.2.9.6.   Discount off of list price

8.2.2.9.7.   Net or bid unit price

8.2.2.9.8.   Quantity

8.2.2.9.9.   Extended list price

8.2.2.9.10.   Extended net price

8.2.2.9.11.   Hardware

8.2.2.9.12.   Software

8.2.2.9.13.   Licensing

8.2.2.9.14.   Maintenance

8.2.2.9.15.   Training

8.2.2.9.16.   Special one-time discounts, such as trade-in allowances, maintenance costs waivers, entered as a product line item as a negative cost or credit.

8.2.2.9.17.   Professional services (includes design of the system)

8.2.2.9.18.   Implementation services

8.2.2.9.19.   Project management costs (including transfer of files from current to new system)

8.2.2.9.20.   Documentation

8.2.2.9.21.   Optional capabilities

8.2.2.10. **System and Licensing Upgrade Costs**

8.2.2.11. The Offeror will specify the minimum discounts off list prices to be applied to all future hardware and software upgrades and any premiums that are applied to hardware and software upgrades relative to the cost of the same component or software title being purchased as part of the initial system.

8.2.2.12. The Offeror shall offer methods of payment and all relevant payment terms. The BOM should be provided in editable (i.e., unprotected Excel) electronic format full and complete line-item pricing should be provided for any item that has its own FRU or SKU number, even if the item is sold as part of a bundle.

8.2.2.13. **Optional Purchase Proposal**

8.2.2.14. The City has an interest in capacity-on-demand, storage-on-demand storage-as-a-service or similar pricing in an operating cost rather than capital expenditure model. In this model, the vendor may submit an optional proposal for the storage requirements for the low cost estimate Phase A & B over a fixed term of no less than 12 months and no more than 72 months and in 12 month increments. For example, a 36 or 60 month term. With this approach, the vendor typically monitors consumption remotely and ships additional storage to the customer on an "as-needed" basis at a specified cost per additional GB or TB.

8.2.2.15. For example: Phase A Low would provide 1,181 TB in Year 1 (2017) at a cost of $X.00 per month for 12 months. Additional storage would cost $X.00 per month per GB.

8.2.2.16. Should the Offeror propose an optional operating cost model, it must include all equivalent costs for hardware, software, licensing, maintenance, upgrades, professional services, and technical model that is comparable to the capital model described above.

8.2.2.17. **PROPOSAL EVALUATION CRITERIA**

8.2.2.17.1.   Proposal responses shall be reviewed, judged, scored, and ranked by an evaluation committee consisting of managers in the Department of Technology and the Department of Public Safety. Evaluation will be a multi-step process consisting first of a compete proposal submission by the vendor prior to the RFP deadline, a review of the proposals by the City's evaluation committee, and then three (3) or more of the highest rated/ranked vendors may be selected with which to hold additional discussions and to present their proposed solutions.

8.2.2.17.2.   **Quality and Feasibility (Sections 5, 6, 7)**

8.2.2.17.2.1.   Proposals must include a description of proposed services and deliverables consistent with the scope outline in Sections 5, 6, and 7. Proposals must also include work samples that satisfy the requirements of the sections listed above.

8.2.2.17.3.   **Ability (Section 8.2.2.8)**

8.2.2.17.3.1.   Vendor must demonstrate the ability to complete the services as planned and on schedule to include the following:

    8.2.2.17.3.1.1.   Capacity Scalability
    8.2.2.17.3.1.2.   Efficiency
    8.2.2.17.3.1.3.   Interoperability and Ecosystem Manageability
    8.2.2.17.3.1.4.   Availability

8.2.2.17.4.   Vendor's Competence (Section 8.2.2.8)

8.2.2.17.4.1.   Vendor shall demonstrate through background and qualifications that they are capable of providing the services described in this RFP. Particular focus will be paid to the work experience of personnel to be assigned by the vendor to this project, in performing similar projects.

8.2.2.17.5.   Past Performance (Section 8.2.2.78)

8.2.2.17.5.1.   Vendors must provide at least 3 reference contact information as described in Section 8.2.2.8. The reference contact shall include the name, email address, street address, telephone number, fax number, and a description of the contract amount and service that was provided.

8.2.2.17.6.   Cost and Payment Term (Section 8.2.2.9)

8.2.2.17.6.1.   **Proposals must identify proposed costs as outlined in Section 8.2.2.9.**

9. PREPARATION FOR DELIVERY

9.1. **Delivery Location:** All deliveries for all software, licenses, media, and/or equipment will be FOB destination, freight prepaid and allowed, Data Center – West, and Data Center – East which will be specified on the purchase order. The reseller is responsible to inspect all software for damage and usability prior to the City of Columbus.

9.2. **Contact Person:** Contact person will be designated on the City of Columbus Purchase Order. Deliveries will be taken between 8:00 AM and 5:00 PM.

9.3. **Invoices:** Supplier will invoice the City of Columbus for the software, licenses, media, and/or equipment together. Invoice for software, license and/or media will be accepted and paid after receipt of the equipment. Accurate invoices shall be processed for payment Net 30 days.

9.3.1. **Invoice Address:**
City of Columbus / Department of Technology
PO Box 2949
Columbus, Ohio 43216

9.3.2. **Invoice Content:** Each invoice shall show the City P.O. number, the quantity, and a brief identifying description of the item or service, the unit price (less discount where applicable), the total amount and the project address.

10. NOTES

10.1. **Universal Term Contract:** This proposal is bidder's offer to sell the item(s) set forth on the bid proposal sheet at the price(s) quoted by bidder thereon, under the terms and conditions of these bid documents. An estimated quantity is set forth on the bid quotation sheet. Bidder is to take notice that the City makes no warranties or representations that the estimated quantity, or any quantity at all, will be ordered by the City even though bidder's proposal is accepted by the City and a firm offer for sale executed.

10.1.1. If bidder's proposal is accepted by the City and the firm offer for sale is executed the bidder is to take further notice that no act, failure to act, or order placed by the City shall constitute an order or contractually bind the City without the proper certificate by the City Auditor that funds sufficient for full payment due on any order are available. Each order placed under the firm offer for sale shall require execution of a purchase order. Therefore in consideration of one (1) dollar received by the awarded bidder, said bidder shall offer to sell buyer, City of Columbus, who shall have the Contract Term to exercise this option to purchase, at the price and on the terms set forth in this bid proposal.

10.1.2. The City shall not be precluded from buying similar items from other suppliers, or the same items in the event of an emergency. In the event of an overlap in the annual term of subsequent Universal Term Contracts, the City may purchase the desired item from either awarded contract at the City's sole discretion.

11. **Written Purchase Order:** Written Purchase Orders may be established for various City Agencies referencing the terms of this contract and specifying delivery locations. The Purchase Order shall not be construed as an actual order to manufacture ship or provide any items or services. Rather, written Purchase Order(s) enable properly authorized City agency personnel to make purchases on an "as needed" basis per this contract.

12. **Proposal Page Instructions:**

12.1 **Bidder must complete the Proposal Page and it needs to be signed with an original signature by an individual authorized to do so for the company and submitted with your proposal.**

12.2 **Bidder must complete all four (4) tabs within the Proposal worksheet(s) identified as Appendix B.**

12.2.1 **Proposed Discounts:** Bidder shall provide applicable percentage discount or markup off of prices shown in Appendix B.

12.2.2 **Representative Costs:** Bidder shall submit the information requested for each representative item listed on worksheets reflecting the proposed discounts/markups. In the event of award, it is understood that these prices will vary depending on changes in pricing shown in Appendix B. But as prices vary, suppliers will continue to offer the same discounts/markups as proposed.

12.2.3 **Multiple Discounts:** All multiple discounts submitted must be in such a fashion that cost to the City of items not specifically listed in the bid is easily comprehendible. It is understood that any like item(s) not designated but listed in the bidder's price list and/or catalog shall be given the same discount.

13. **Insurance Requirements**

Liability Insurance: The contractor shall take out and maintain during the life of the contract, such Public Liability (bodily injury and property damage) Insurance as shall protect him from claims from damages for personal injury, including accidental death, as well as from claims for property damage which may arise from operations under the contract, whether such operation be by himself or any subcontractor or by anyone directly or indirectly employed by either of them. Such insurance policy shall include the city as named insured. The Contractor shall maintain coverage of the types and in the amounts specified below. Submitting a certificate of insurance shall evidence proof of such insurance coverage. A contractor's "umbrella" type policy with limits specified below may be submitted for this requirement, with the City as named insured.

The amount of such insurance shall be as follows:
Bodily Injury Liability

Each Person $1,000,000.00
Each Accident $1,000,000.00

Property Damage Liability
Each Person $1,000,000.00
All Accidents $1,000,000.00

Such insurance shall remain in full force and effect during the life of the contract. Insurance may not be changed or cancelled unless the insured and the City are notified in writing not less than thirty days prior to such change or cancellation. If any part of the contract is sublet, the Contractor is responsible for the part sublet being adequately covered by insurance herein above described.

Contractor assumes all risk of loss and damage to the equipment provided unless loss or damage occurs at the time the operator and equipment are being operated for the purpose designated by

the city and such loss or damages is caused by an act of the city or its employee which constitutes gross negligence or wanton misconduct.

Worker's Compensation Insurance: The contractor shall take out and maintain, during the life of this contract, adequate worker's compensation insurance for all his employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the subcontractor similarly to provide worker's compensation insurance for the latter's employees, unless such employees are covered by the protection afforded by the Contractor. The Contractor shall furnish three (3) copies of the worker's compensation certificate showing that the Contractor has paid his industrial insurance

Insurance Verification: The Contractor shall submit to the Purchasing Office proof that the required insurance and Workman's Compensation is paid and in effect. This shall be submitted with Contract number identification by February 1, and August 1, of each year. Mail To:

Purchasing Office
77 North Front Street
Columbus, Ohio 43215

14. **E-Catalog Requirements:** Not withstanding any price list, catalog, website, etc. that must be submitted to comply with the bidding requirements within this document, the City has implemented an "E-Catalog" system that will require all awarded vendors to provide additional product information that is required by the City to identify and create Purchase Orders for any product (or service) that is included in the proposal submitted by the vendor.

Product Data: The information required for each product includes, but is not limited to:

Agreement Number (from City)	Agreement expiration date (from City)
Product Description	Awardee Part Number (if applicable)
Manufacturer Name	Manufacturer Product Number
Product UNSPSC	Product Lead Time
Product Price	Product UOM

Implementation Methods: Any contract awardee must work with the City prior to final execution of the contract for this solicitation to implement a catalog/price list in the City's "E-Catalog" system. This may be fulfilled by offering a "punch out" to the vendor's web catalog, electronic price list or Excel spreadsheet.

Awardees offering a "punch out" option must be able to limit offered catalog based items based on categories awarded in the contract or other approved method.

Awardees offering a price list of specific items must work with the City prior to final execution of the contract in order to implement a price list in the City's "E-Catalog" system. This can be fulfilled by offering an Excel spreadsheet with the required information requested by the City.

Awardees will be responsible for notifying and supplying the City with any subsequent price increases to the price list or excel spreadsheets in a timely manner to allow for updating the E-Catalog system, subject to the price escalation clause included in this contract.

15. **Correspondence:** All correspondences regarding the contract should be directed to the contact listed below.

Antonio O. Beasley
aobeasley@columbus.gov
City of Columbus/Purchasing Office
77 North Front Street 5th Floor
Columbus, OH 43215

16. **RFQ/RFP Contact Information:** All questions and communications relating to this bid must be directed to the contact persons named on page 2. All other communications between a vendor and any other City staff concerning this bid are prohibited.

APPENDIX A

	Total Score	0

Quality and Feasibility (Section 4, 5 6, 8)	0
As described in the proposal, rate the vendor's understanding of the services needed and deliverables required, as indicated by sample materials provided in the proposal (0-15 points, with 15 being best understanding).	
Did the proposal include an example service plan with timelines and all resources required (from both the City and vendor) to complete the deliverables?	

After reviewing the example service plan provided in the proposal, rate the quality and feasibility of the plan (0-10, with 10 being best quality and most feasible).

Ability (Section 8)	0
As described in the proposal, rate the vendor's ability to provide personnel to meet the City's needs at the time services are needed (0-5 points, with 5 being most able).	
As described in the proposal, rate the vendor's financial stability (0-5, with 5 being most stable).	

Vendor's Competence (Section 9)	0
As written in its proposal, did the vendor demonstrate competence to perform the required services as indicated by the education and experience of proposed personnel (0-15 points, with 15 being most competent).	
As written in its proposal, did the vendor guarantee that equivalent staff will be made available in the event that proposed staff are no longer available? (0-10 points, with 10 being the best guarantee).	

Past Performance (section 9)	0
As written in its proposal, did the vendor provide contact information for at least three (3) professional references?	
After reviewing the vendor's references, as provided in the proposal, rate the vendor's past performance in providing quality services on projects of a similar size and complexity (0-25 points, with 25 being best).	

Cost & Payment Terms (section 10)	0
After reviewing the vendor's estimated cost proposal, rate the proposed costs (0-15 points, 15 is the lowest cost).	

PROPOSAL

To the Finance & Management Director of the City of Columbus, Ohio:

We (I) propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

Delivery: _____ - calendar day(s) after receipt of order.

Terms:

_____

Company Name or Bidder's Name:

_____

Business Address of Bidder:

_____

REQUIRED Company Employee Information:
    Total number of company employees = _____
    Total number of company employees working in Columbus = _____
    Additional number of employees that will be working in Columbus in the event this contract is awarded to your company = _____

The full name and residence of all persons and parties interested in the foregoing bid are: (If a corporation, give the name and address of the president and secretary; if firm or partnership, the names and address of the Members or partners.)

Name	**Address**
_____	_____
_____	_____
_____	_____
_____	_____

Authorized Signature X _____ **Title:** _____
      (SIGNATURE MUST IN WRITING IN OTHER THAN BLACK INK)   (TITLE MUST BE GIVEN)

REVISED 10-5-05

CONTRACT SIGNATURE AFFIDAVIT
(Must be completed when the individual signing the contract is NOT an officer or Member of the Company.)

STATE OF:_____

COUNTY OF:_____

_____, being duly sworn, deposes and says that he/she is

_____ of_____, a Corporation, LLC, or LLP organized and existing under
(Title)   (Company Name)

and by virtue of the laws of the State of _____, and having its principal office at

_____
City, State, Zip Code

Affiant further says that he/she is familiar with the records, minute books and by-laws of

_____
(Company Name)

Affiant further says that _____is_____
                         (Name of Person Signing Contract)   **(Title)**

Of the Company and is duly authorized to sign the Contract for:_____

For said Company by virtue of _____
(State whether the provision of by-laws or a resolution of the Board of Directors. If resolution, give date of adoption.)

_____
Signature of Affiant**

** AFFIANT MUST BE SOMEONE OTHER THAN THE INDIVIDUAL SIGNING THE CONTRACT**

Sworn to before me and subscribed in my presence this _____day of _____20____

_____
Notary Public

My Commission Expires: _____

EQUAL OPPORTUNITY CLAUSE

(1) The contractor/vendor/bidder will not discriminate against any employee or applicant for employment because of race, sex, sexual orientation, gender identity or expression, color, religion, ancestry, national origin, age, disability, familial status or military status. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, sex, sexual orientation, gender identity or expression, color, religion, ancestry, national origin, age, disability, familial status or military status. Such action shall include, but not be limited to, the following: employment up-grading, demotion, or termination; rates of pay or other forms of compensation; and selection for training. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices summarizing the provisions of this Equal Opportunity Clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that the contractor is an equal opportunity employer.

(3) It is the policy of the City of Columbus that business concerns owned and operated by M/WBEs shall have the maximum practicable opportunity to participate in the performance of contracts awarded by the city.

(4) The contractor shall permit access to any relevant and pertinent reports and documents by the ODI director for the sole purpose of verifying compliance with this Title and ODI regulations. All such materials provided to the ODI director by the contractor shall be considered confidential.

(5) The contractor will not obstruct or hinder the ODI director or his/her deputies, staff and assistants in the fulfillment of the duties and responsibilities imposed by Title 39 of the Columbus City Codes.

(6) The contractor and each subcontractor will include a summary of this Equal Opportunity Clause in every subcontract. The contractor will take such action with respect to any subcontractor as is necessary as a means of enforcing the provisions of the Equal Opportunity Clause.

(7) The contractor agrees to refrain from subcontracting any part of this contract or contract modification thereto to a contractor not holding a valid certification number as provided for in Title 39.

(8) Failure or refusal of a contractor or subcontractor to comply with the provisions of Title 39 may result in cancellation of this contract.

ALL CONTRACTORS MUST HOLD A VALID CONTRACT COMPLIANCE CERTIFICATION NUMBER ISSUED BY THE OFFICE OF DIVERSITY AND INCLUSION.

To obtain a Contract Compliance number register at the City of Columbus Vendor Services website: http://vendors.columbus.gov/sites/public

1. Login to the City of Columbus Vendor Services Site and register with the city of Columbus. Once that is completed and approved by the purchasing office, log back in and do the following:

2. Select **Questionnaires** from the Common menu located on the left navigation bar.

3. Next select EBO Quest. (this is the contract compliance application)

4. Question 1 will be displayed; Answer question 1 and select **Forward**.

5. Proceed through the questionnaire answering each question and selecting **Forward** to continue. Once you have reached and answered the last question select **End** to submit.

6. Then the questionnaire will be received by the ODI Office, reviewed and process within 2 business days or less. For additional questions regarding this process, contact the Office of Diversity Inclusion at 614-645-4764.

City of Columbus Home Page: www.columbus.gov

City of Columbus

RFQ004361 – VIDEO STORAGE UTC

Due Date

Copy

CDW Government LLC
230 N. Milwaukee Ave.
Vernon Hills, IL 60061

CDW•G PEOPLE WHO GET IT

Table of Contents

Please note: We have not included the Contract Signature Affidavit as our proposal is signed by a Member of the Company rendering that form Not Applicable.

City of Columbus
Purchasing Office
Antonio Beasley
77 N. Front Street
5th Floor
Columbus, OH 43215

March 9, 2017

RE: RFQ004361 – VIDEO STORAGE UTC

Dear Mr. Beasley,

The City of Columbus (the City) seeks proposers to provide and install video storage for policy body-worn cameras (BWC), dash cameras (DC), and other video-related data. Founded with the express purpose of supporting government customers, CDW Government LLC (CDW•G) is uniquely qualified to provide this solution.

For this opportunity, we have chosen to partner with NetApp. A leader in storage and data management, NetApp offers both products and support to ensure this project is a success. For this opportunity, we are proposing a trusted, validated solution specific to Public Safety video storage. Our solution is a brick (building block) based solution. Each brick provides the capacity and performance needed to support your needs with the ability to scale should you require more storage.

In addition to your NetApp solution, the City will benefit from CDW•G's strong partnership with NetApp. We are NetApp's number one partner for FlexPod, Flash Storage, Clustered Data ONTAP, and E-Series. We trust the quality of NetApp's products, and we currently have 15 engineers with 52 certifications dedicated solely to NetApp solutions. With the CDW•G and NetApp team, the City will have the support necessary for your video needs.

CDW•G is a Limited Liability Company based out of Illinois. CDW•G's Federal Tax Identification Number is 36-4230110. People who prepared this proposal include: Demi Utley–Sr. Proposal Specialist, Nick Geiser–Field Account Executive II, Kathy Rekers—Field Solutions Architect, Bob Krause – Systems Engineer (NetApp), and Dave Franko—Sales Representative (NetApp). Should you have questions regarding our proposal, please contact Demi Utley at 312.547.2993 or demiutl@cdw.com

Sincerely,

Brian Fisher
Manager – Program Management

*ONE (1) HARD COPY <u>ORIGINAL</u> AND USB
<u>FLASH DRIVE (Proposal with completed</u>
<u>templates)</u> OF THIS BID MUST BE SUBMITTED

REQUEST FOR PROPOSAL (RFP)

City of Columbus, Ohio
Purchasing Office
77 North Front Street, 5th Floor
Columbus, Ohio 43215
614/645-8315

RFQ004361 / VIDEO STORAGE UTC
(Solicitation No.) / (Item)

TECHNOLOGY
(Department)

N/A
(Division)

Bid Opening Date and Time (due date and time)
Thursday, March 9, 2017 at 11:00 a.m. local time.

Sealed proposals will be received by the Purchasing Office at 77 N. Front Street, 5th Floor, Columbus, Ohio 43215, until this date and time and then will be publicly opened and read. Proposals received after the opening time will be returned to the bidder unopened. The City will not be responsible for late mail or other deliveries.

NOTE: FAILURE TO RETURN THIS BID PROPOSAL INTACT MAY BE CAUSE FOR REJECTION.

Bid Proposal Submitted By:

CDW Government LLC

Company Name

230 N. Milwaukee Avenue

Street Address

Vernon Hills	Illinois	60061
City	**State**	**Zip**

Contract Compliance Number is: 364230110

36-4230110	X YES / NO (circle one)	demiutl@cdw.com
Federal I.D. No.	**Contract Compliance No.**	**E-Mail Address**

Brian Fisher, Manager - Program Management 312.547.2993 312.705.4696

Contact Person	**Phone No.**	**Fax No.**

Non-Collusion Affidavit

(This affidavit must be executed for the proposal to be considered)

State of ____Illinois____)

)ss

County ____Cook____)

Brian Fisher
_____, being first
duly sworn deposes and says that the is, __Manager - Program Management__ ,(sole
owner, a partner, president, secretary, etc.) of the party making the foregoing
proposal or bid; that such bid is genuine and not collusive or sham; that said bidder
is not financially interested in, or otherwise affiliated in a business way with any
other bidder on the same Contract; that said has not colluded, conspired, connived
or agreed, directly or indirectly, with any bidder or person, to put in a sham bid, or
that such other person shall refrain from bidding, and has not in any manner
directly or indirectly, sought by agreement or collusion, or communication or
conference, with any person, to fix the bid price of affiant or any other bidder or to
secure any advantage against the City of Columbus, Ohio or any person or persons
interested in the proposed Contract; and that all statements contained in said
proposal or bid are true; and further, that such bidder has not directly or indirectly
submitted this bid, or the contents thereof or divulged information or data relative
thereto to any association or to any member or agent thereof.

_____   Brian Fisher
Signature of Affiant

Sworn to and subscribed before me this __7__ day of __March__, 20_17_.

"OFFICIAL SEAL"
JUSTIN SCHWIER   Notary public in and for
Notary Public, State of Illinois
My Commission Expires May 18, 2019
COMMISSION # 749822

(Seal)

Cook   IL
(county)   (state)

My commission expires: 5.18.2017

Sample Certificate of Insurance - To be customized upon award.

ACORD® CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
10/03/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:			
Aon Risk Services Central, Inc. Chicago IL Office 200 East Randolph Chicago IL 60601 USA	PHONE (A/C. No. Ext): (866) 283-7122		FAX (A/C. No.): (800) 363-0105	
	E-MAIL ADDRESS:			
	INSURER(S) AFFORDING COVERAGE			NAIC #
INSURED CDW Corporation 200 North Milwaukee Avenue Vernon Hills IL 60061 USA	INSURER A: Travelers Property Cas Co of America			25674
	INSURER B: The Charter Oak Fire Insurance Company			25615
	INSURER C: The Phoenix Insurance Company			25623
	INSURER D: Lloyd's Syndicate No. 2623			AA1128623
	INSURER E:			
	INSURER F:			

COVERAGES   CERTIFICATE NUMBER: 570064014400   REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
C	X COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE X OCCUR			H6605D53096APHX16 see addendum	10/01/2016	10/01/2017	EACH OCCURRENCE	$1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$1,000,000
							MED EXP (Any one person)	$10,000
							PERSONAL & ADV INJURY	$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT ☐ LOC OTHER:						GENERAL AGGREGATE	$2,000,000
							PRODUCTS - COMP/OP AGG	$2,000,000
B	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY SCHEDULED AUTOS HIRED AUTOS ONLY NON-OWNED AUTOS ONLY			BA-5D57054A-16-TEC	10/01/2016	10/01/2017	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
							BODILY INJURY (Per person)	
							BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION			HSUMCUP5D53096ATIL16 SIR applies per policy terms & conditions	10/01/2016	10/01/2017	EACH OCCURRENCE	$5,000,000
							AGGREGATE	$5,000,000
							Retained Limit	$10,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N			TC2JUB1117L61616 AOS	10/01/2016	10/01/2017	X PER STATUTE OTH-ER	
A	ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		TRJUB1116L66816 AZ, MA, WI	10/01/2016	10/01/2017	E.L. EACH ACCIDENT	$1,000,000
							E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000
D	E&O-MPL-Primary			W19A8C160201 SIR applies per policy terms & conditions	10/01/2016	10/01/2017	Aggregate	$5,000,000
							SIR	$500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
For Evidence of Coverage.
Insured include: CDW Government LLC; CDW LLC; CDW Direct LLC; CDW Logistics; CDW Technologies LLC; CDW Finance Corporation.

CERTIFICATE HOLDER	CANCELLATION
	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
CDW Corporation 200 North Milwaukee Avenue Vernon Hills IL 60061 USA	AUTHORIZED REPRESENTATIVE *Aon Risk Services Central, Inc.*

Holder Identifier :

570064014400

Certificate No :

ACORD®

ADDITIONAL REMARKS SCHEDULE

Page _ of _

AGENCY		NAMED INSURED
Aon Risk Services Central, Inc.		CDW Corporation
POLICY NUMBER		
See Certificate Number: 570064014400		
CARRIER	**NAIC CODE**	**EFFECTIVE DATE:**
See Certificate Number: 570064014400		

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: ACORD 25   FORM TITLE: Certificate of Liability Insurance

Commercial General Liability

Commercial General Liability

 Policy# H6605D53096APHX16

State and Insurer(s) Affording Coverage

California   Travelers Property Casualty Company of America   NAIC# 25674

All Other   The Phoenix Insurance Company   NAIC# 25623

Response to RFP Questions

8.2. Solution Architecture and Platform

8.2.1 Architectural Solution Overview

<u>Requirement</u>

8.2.1. Offeror should provide an architectural solution overview, including:
8.2.1.1. A high-level architecture to include a description of the solution being proposed.
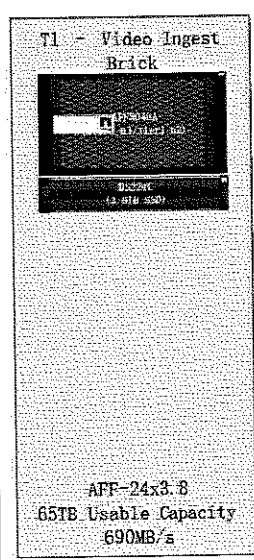
<u>Response</u>

To best meet the City of Columbus performance and storage requirements by tiers, while maintaining a simplified design CDW•G and NetApp are proposing a brick (building block) based approach. Each brick provides capacity and performance and can scale out to a maximum of 12 bricks or 24 nodes for a maximum single pane of management capacity of up to 14PB. The bricks for tier 3 are shown as Option 1 which is a hybrid design with multi-protocol capability. We have also included an alternative Option 2 based on NetApp's extensive experience with solutions of this type. Option 2 is a lower cost single block protocol FC or iSCSI only version and is fully compatible with and typical of solutions such as Watchguard. These bricks are coupled in both cases with a high performance Multi- Protocol all flash controller for Tier 1 to provide the highest performance while maintaining a simple to manage design.
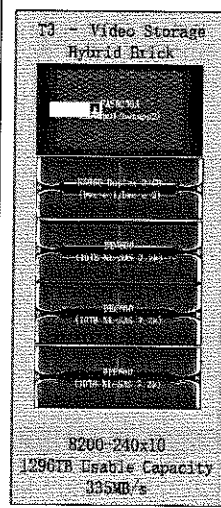
Tier-1 – Video Ingest Brick

The Tier 1 all Flash Video Ingest Brick provides extremely high performance storage over all protocols to meet City of Columbus Video Ingest Requirements. Note that Phase A and B both low and high (32TB Maximum) are covered by the 64TB usable capacity of this brick and only one brick will be needed per site (production and one additional for disaster recovery if desired) over the 5-year requested timeframe of this solution. This allows for a more simplified and cost effective solution. Excess capacity can be utilized for other desired multi-protocol applications. The Tier-1 – Video Ingest Brick is based on the NetApp AFF (All Flash FAS) controller which is the #1 fastest share growing flash controller in the industry.

T1 - Video Ingest Brick

AFF-24x3.8
65TB Usable Capacity
690MB/s

ONTAP All Flash FAS

24x 3.8TB SSD Drives

Provides IP and Block Connectivity

Supports CIFS (SMB2, SMB3), NFS (NFSv3, NFSv4, NFSv4.1), pNFS, iSCSI, FC, FCoE.
8x 10GbE/16Gb FC Unified Target Adapter
8x 1GbE

Maximum Drives – 720 (per brick)
Maximum Raw Capacity – 7.2PB (per brick)

Formatted Capacity Per Brick = 64TB

Bandwidth per brick = 690MB/s

Tier-3 – Option 1 Hybrid Multi-Protocol Brick - Body Worn Camera and Dash Camera Video Retention

The Tier-3 Option 1 Hybrid Multi-Protocol Brick for Body Worn Camera and Dash Camera Video Retention provides performant capacity storage over all protocols to meet City of Columbus Video Ingest Requirements. The system combines the best in class multi-protocol support of ONTAP FAS controllers with high density and performance scalability of ESeries which is the #1 selling storage product in the world with almost 1 Million systems shipped. Scaling through phases A and B high and low are achieved by adding one 1.3PB @335MB/s brick at a time up to six bricks to achieve the 7PB of desired capacity. Note that 5 bricks actually equal 6.5PB @1675MB/s and 6 bricks actually equal 7.8PB @2010MB/s. More granular scaling is available, but would result in more smaller bricks being added which would increase complexity and cost. The solution actually supports up to 12 bricks for a total scalability of 15.6TB @4020MB/s should the need arise.

	ONTAP FAS8200 ESeries 5660 240x 10TB NL-SAS Drives Provides IP and Block Connectivity Supports CIFS (SMB2, SMB3), NFS (NFSv3, NFSv4, NFSv4.1), pNFS, iSCSI, FC, FCoE. 8x 10GbE/16Gb FC Unified Target Adapter 8x 10GbE Base-T Maximum Drives – 480 (per brick) Maximum Raw Capacity – 4.8PB (per brick) Formatted Capacity Per Brick = 1.296PB Bandwidth per brick = 335MB/s

Tier-3 – Option 2 Dedicated Block Protocol Video Storage Brick - Body Worn Camera and Dash Camera Video Retention

The Tier-3 Option 2 Dedicated Block Protocol Video Storage Brick for Body Worn Camera and Dash Camera Video Retention allows for direct block access to storage for Watchguard without the additional cost of the multiprotocol enablement by the FAS. This alternative option provides lower cost single protocol storage over dedicated Fibre Channel or iSCSI fabric to meet City of Columbus Video Tier 3 Requirements. Traditionally single protocol solutions are sufficient to meet the requirements of solutions like Watchguard and can provide a significantly lower cost alternative to a multi-protocol solution by as

much as 50%. This design utilizes the high density and performance scalability of ESeries which is the #1 selling storage product in the world with almost 1 Million systems shipped. Scaling through phases A and B high and low are achieved by adding one 2.46PB @670MB/s brick at a time up to three bricks to achieve the 7PB of desired capacity. Note that 3 bricks actually equals 7.4PB @2010MB/s. Like Option 1, more granular scaling is available, but would result in more smaller bricks being added which would increase complexity and cost. The solution actually supports an unlimited about of bricks an scalability up to the limitation of the Watchguard application itself, so as many bricks can be added as needed.

Requirement

8.2.1.2. An explanation of how the solution will support the organization's existing software portfolio, Service Level Agreements (SLAs) and operational procedures.

Response

ONTAP integrates into existing applications to provide instant point in time recovery points that can be matched to the City of Columbus current SLAs. These integration points can be automated through most existing third-party software platforms or through the NetApp provided SnapManager and SnapCenter products.
The following applications come with integration packages. Additional integration points can be provided through ONTAPs APIs for the following solutions; Microsoft Exchange, Microsoft SQL, Microsoft SharePoint, Microsoft Hyper-V, Microsoft Windows 2008 R2 and Later, VMWare, Oracle (Unix and Windows), SAP (Unix and Windows), Redhat Linux 5 and later, AIX, Solaris, and Linux (generic)

Requirement

8.2.1.3. An identification of any restrictions or capacity limitations regarding what services can run on given platform(s) in the proposed solution.

Response

ONTAP: The FAS series supports CIFS, NFS, ISCSI, FCP, and FCoE under a single platform with no limits based on underlying media.

SANtricity: The E-Series supports FCP, ISCSI, SAS, and Infiniband only.

Requirement

8.2.1.4. An identification of any storage efficiency feature restrictions related to the applications being hosted on the proposed solution.

Response

ONTAP: The FAS and AFF series efficiencies include inline and post process deduplication, compression, and data compaction. All efficiencies are available across all protocols and work on a block, not file basis for maximum efficiency and can be managed globally or per volume.

SANtricity: The E-Series does not support deduplication or compression as it is designed for applications that have efficiencies built in at the application layer such as the compression built into video surveillance solutions.

Requirement

8.2.1.5. An identification of how requisite performance will be delivered in the proposed solution.

Response

Tier 1 proposed solution is estimated to achieve 690MB/s of sustained throughput at 90% random writes under 1ms.

Tier 2 proposed solution is estimated to achieve 980MB/s of sustained throughput at 90% random writes under 1ms.

Further validation of expected performance can be seen by independent testing results found on the SPC-1 postings. Result links can be found in section 8.2.2.5.2.6.

Requirement

8.2.1.6. A description of how growth is accounted for in the overall system design (scalable solution e.g., scale-out versus scale-up). Identify how much capacity can be added to the proposed installation.

Response

ONTAP: The proposed FAS platform is able to scale out to +10PB per HA pair with a maximum of 12 nodes in a SAN cluster or 24 nodes in a NAS cluster. The platform is able to scale compute and storage independently. In the event that a resource limitation is found, additional capacity or compute can be added to the cluster non-disruptively.

Requirement

8.2.1. 7. An identification of how high availability is accomplished (i.e., fault tolerance, self-healing, self-repairing, non-disruptive repair and upgrade activities) with the proposed solution.

Response

ONTAP: FAS systems routinely deliver availability of 99.999% or greater (that is, just minutes of downtime per year).2 Standard product features—some of which are unique— within every FAS system provide protection against component issues and local outages caused by power, air conditioning, and human error.

This is achieved utilizing the following technologies:

- **HA Paired Controllers** – Provides data availability by transferring data services from an unavailable controller to a surviving partner.
- **Multipath HA** – Multiple paths to all storage shelves, providing controller access to all shelves in a stack.
- **IOM6 and IOM12** – Modules provide direct disk access. All disks are isolated from each other so disk errors cannot propagate.
- **RAID-DP** – An advanced, cost-effective solution that protects your environment against the impact of a double disk outage within a single RAID group and does so with no discernable performance impact.

Lost write protection detects lost writes (for example, writes lost due to media errors), then uses RAID parity to reconstruct the data.

SANtricity: The E-Series storage systems deliver high-speed, continuous data access. With over 20 years of storage development, the E-Series is a field-proven architecture designed to provide high reliability and greater than 99.999% availability with appropriate configurations and service plans. All components are hot swappable and redundant so there is no single point of failure. Code updates and hardware expansion can be performed online while in production. The E-Series advanced protection

features and extensive diagnostic capabilities deliver high levels of data integrity, including Data Assurance (T10-PI) to protect against silent drive errors.

Requirement

8.2.1.8. A description of the approach to deploying the storage array in hybrid cloud environments.

Response

Clustered Data Ontap (OS behind FAS) is able to replicate via native tools to both the software-only version of Clustered Data Ontap installed in the cloud or directly to cloud providers such as Amazon, via Cloud Ontap, which is FedRamp certified.

CDMI/S3 integration can also be provided via StorageGrid Webscale, which allows geo-dispersal of data behind a single namespace.

Requirement

8.2.1.9. An identification of whether all proposed hardware are new (unused) and the latest models are in current production, including an explanation for any deviations.

Response

ONTAP: The FAS9000/8200 is NetApp's latest model in the FAS line.

SANTricity: The E5600 is NetApp's latest 5000 series ESeries system. All products are shipped brand new from manufacturing.

Requirement

8.2.1.10. Describe the life-cycle process of the hardware chosen.

Response

End of Availability Process

NetApp typically ships new products for two to three years before they reach their EOA (End Of Availability date. NetApp follows that with a guaranteed minimum of 5-years support available after the EOA date. NetApp also makes new feature and maintenance software updates available for two years after the EOA date. Once the minimum 5-years past EOA time has lapsed, the product will go EOS (End Of Support) where support is no longer available for the product. Note that the five years of guaranteed support availability after EOA is a minimum and many products are actually supported well beyond that five-year minimum. When adding together support during product and support after end of availability, most NetApp products experience a minimum 7-8 year practical use lifespan.

For current information on End of Availability Index,
visit: https://mysupport.netapp.com/info/eoa/index.html

Requirement

8.2.1.11. A summary of the key differentiating aspects of your solution versus other leading vendors.

Response

With nearly 1M units deployed, the NetApp E-Series storage coupled with its Santricity Operating System is the #1 Storage product in the world with more E-Series based systems in operation than any product from any storage vendor in the world. This solution provides the bandwidth performance to power the most scalable and high performing solutions with industry-leading density and FIPS capable security.

This saves data center floor space and lowers operational costs. E-Series systems use a modular architecture that offers a true pay-as-you-grow solution to address the new big data video storage requirements. Leading intelligent video security applications combined with E-Series storage handle the heavy computational workloads and bandwidth-sensitive streaming environments of next-generation video surveillance infrastructures. NetApp E-Series based solutions are so reliable, powerful, and scalable that they are used by 5 of the top 10 supercomputers in the world including the Sequoia Supercomputer at Lawrence Livermore National Laboratory with over 200PB of capacity.

8.2.2. Storage Array Functionality

Requirement

8.2.2.1. Capacity Scalability
8.2.2.1.1. The solution must support seamless addition in capacity. Identify the following characteristics of the proposed solution:
8.2.2.1.1.1. Maximum storage capacity a single array can support

Response

The maximum storage capacity for a single array is as follows:

- E5660 360x 10TB NL-SAS Drives – 3600TB raw per HA Pair
- FAS8200 480x 10TB NL-SAS Drives – 4800TB raw per HA Pair

Requirement

8.2.2.1.1.2. Maximum usable capacity

Response

Maximum usable capacity is:

- E5660 360x 10TB NL-SAS Drives - 2467TB Usable per HA pair
- FAS8200 480x 10TB NL-SAS Drives – 3316TB Usable per HA pair

Note: All capacities provided are end state usable and account for RAID, OS, and drive overheads.

Requirement

8.2.2.1.1.3. Type of Disk subsystem: Maximum number of physical harddisk drives/solid-state drives (HSSs/SSDs) per system. Provide detailed response by drive type and size.

Response

ONTAP: Please see the FAS8200 specifications in the chart below.

Dats OnTap FAS8040	
Maximum capacity	7200TB
Maximum drives	720
Memory	64GB
Maximum Flash Cache™	4TB
Maximum Flash Pool	48TB
Combined flash total	48TB
NVRAM	16GB
PCIe expansion slots	8
Onboard I/O: UTA2 (10GbE/FCoE, 16Gb FC)	8

Onboard I/O: 10GbE	8
Onboard I/O: GbE	8
Onboard I/O: 6Gb SAS	8
Disk Shelves Supported	DS212C (2U; 12 drives, 3.5" LFF, 12Gb) DS224C (2U; 24 drives, 2.5" SFF, 12Gb) DS2246 (2U; 24 drives, 2.5" SFF, 6Gb) DS4246 (4U; 24 drives, 3.5" LFF, 6Gb) DS4486 (4U; 48 drives, 3.5" LFF, 6Gb) DS4243[2] (4U; 24 drives, 3.5" LFF) supported for upgrades only with ONTAP 9 DS4246 (DS4243 with IOM6 added) – supported in ONTAP 9.1+
SANTRICITY: E5660	
	E5660 (DE6600)
Form factor	4U/60 drives (both 2.5" and 3.5")
Maximum raw capacity	600TB
	3.8PB with expansion shelves (using 10TB drives)
Maximum drives	360 with 60-drive shelves
	384 with mixed shelves
	120 SSDs (25 SSDs per 60-drive shelf)
Drives supported	4/6TB NL-SAS 7.2K FDE/non-FDE
	8/10TB NL-SAS 7.2K non-FDE
	6/10TB[2] NL-SAS 7.2K FIPS
	900GB 1.2/1.8TB SAS 10K FDE/ non-FDE
	1.8TB SAS 10K FIPS
	800GB, 1.6/3.2TB SSD non-FDE
	800GB SSD FDE
	1.6TB SSD FIPS

Requirement

8.2.2.1.1.4. Maximum size of a file system

Response

Maximum size of a file system is:

- **ONTAP:** Maximum volume size – 100TB, Maximum number of volumes – 1000 per HA. Total file system maximum 97PB
- **SANtricity:** Maximum volume size – 2048TB, Maximum volume count 2048. Total file system maximum 4096PB

Requirement

8.2.2.1.1.5. Number of snapshots file system and per system

Response

The number of snapshots available are as follows:

- **ONTAP/SANTRICITY:** 255 Per Volume, no system limit

Requirement

8.2.2.1.2. The array must support non-disruptive expansion of any logical volume in the system.

Response

ONTAP/SANTRICITY: The system provides the ability to non-disruptively upgrade the OS, disk firmware, and shelf firmware.

Requirement

8.2.2.1.3. Describe any methods used to maintain adequate performance levels as the proposed solution scales in capacity.

Response

ONTAP: The system is able to scale both in compute and storage independently as needs require up to a maximum of 24 nodes in a cluster. Onboard performance management tools are able to collect and provide performance information to help better understand what aspect of the cluster needs to be expanded.

SANtricity: The system is able to scale in both storage and throughput requirements as needed.

Requirement

8.2.2.1.4. Describe methods available that facilitate minimal scaling of storage administrative personnel as the array scales in capacity.

Response

ONTAP: Clustered Data OnTap is designed to bring all FAS devices in the environment under a single cluster, which provides a single pane of glass management. Further tools allow storage integration into the application layer so that the storage can be managed through the application layer without needing to be trained on storage.

This can be further expanded upon with Work Flow Automation (WFA), which can be leveraged with an Orchestration software to automated provisioning task or can be used as an Orchestration layer to simplify full stack deployment.

SANtricity: Santricity is designed to be setup once at install and then managed through the application that it supports.

Requirement

8.2.2.2. Efficiency
8.2.2.2.1. Is this provisioning supported?

Response

ONTAP/SANTRICITY: Yes, this provisioning is supported.

Requirement

8.2.2.2.1.1. Describe the general process used to perform thin provisioning

Response

ONTAP: When deploying a volume and/or LUN that will be thin provisioned, select thin provision option. When used with automation tools such as WFA and SVC, this is the default behavior.

SANTRICITY: When deploying a LUN, select thin provisioned.

Requirement

8.2.2.2.1.2. Describe the performance impact of the thin provisioning feature and any restrictions in the thin provisioning design. Specifically, describe storage tiers and third-party applications that should or should not utilize thin provisioning.

Response

ONTAP: No restrictions nor performance impacts. This is the systems default behavior.

SANTRICITY: No restrictions nor performance impacts.

Note: When thin provisioning, it is a best practice to monitor storage consumption to ensure that capacity is available for all writes. This can be provided by all NetApp systems via SNMP or SMTP.

Requirement

8.2.2.2.2. What type of data reduction (compression, deduplication, etc) support by protocol is offered to enhance storage efficiency? Please describe your options for:
8.2.2.2.2.1. Deduplication

Response

ONTAP: Supports Deduplication, Compression, and Compaction regardless of protocol used. Please see section 8.2.1.4 for a list of expected savings based on application.

SANTRICITY: Does not support Deduplication

Requirement

8.2.2.2.2.2. Compression

Response

ONTAP: Supports Deduplication, Compression, and Compaction regardless of protocol used. Please see section 8.2.1.4 for a list of expected savings based on application.

SANTRICITY: Does not support Compression

Requirement

8.2.2.2.3. Describe the automated storage-tiering capabilities offered by the system to enhance performance and reduce costs.

Response

ONTAP: Comes with built in NVMem flash acceleration for reads. The system also comes built in with NVRAM for write cache acceleration. The system additional supports using SSD for both read and write caching.

SANTRICITY: Supports using SSDs for both read and write cache acceleration.

Requirement

8.2.2.2.3.1. Describe whether these features can be turned off or provisioned for all or a portion of the storage array.

Response

ONTAP: NVMem and NVRAM caching are system wide and cannot be disabled. SSD caching can be enabled/disabled on an aggregate basis.

SANTRICITY: SSD caching can be enabled on a per volume basis.

Requirement

8.2.2.2.3.2. Describe the ability of the system to configure and manage flash as second-level cache.

Response

ONTAP: NVMem and NVRAM caching are system wide and cannot be disabled. SSDs can either be used as a primary medium OR as a caching mechanism. When used as a cache mechanism, no additional management is required as caching occurs on the block level as part of the RAID configuration.

SANTRICITY: SANtricity allows adjusting caching on a block level to better match its supporting application.

<u>Requirement</u>

8.2.2.2.3.3. What enhancements have been made to data reduction features in your product to take advantage of flash?

<u>Response</u>

ONTAP: Clustered Data OnTap was designed to leverage deduplication when that technology was first being developed. By integrating space savings at the block level to the storage OS, we are able to handle a larger amount of data to the cache as all caching tiers are efficiency aware. This same efficient use of cache is extend out to all aspects of the OS, so other features such as replication are also efficiency.

SANTRICITY: SANtricity does not leverage data efficiencies technologies. It, however, is designed to provide the highest IO/bandwidth and the lowest latencies and lowest IO/$ and GB/$ ratio in the industry. For reference, this can be seen with the E-Series SPC-2 benchmark results online at: <u>http://www.storageperformance.org/benchmark_results_files/SPC-2/NetApp/B00078_NetApp_EF560_All-Flash-Array/b00078_NetApp_EF560_All-Flash-Array_SPC-1_full-disclosure-report.pdf</u>

<u>Requirement</u>

8.2.2.2.3.4. Describe any other differentiating or highly innovative features compared to leading competitors. Include whether these features are proprietary or not.

<u>Response</u>

ONTAP: Data OnTap has been using flash acceleration for all writes since its inception in 1994. In 2008, NetApp released the Performance Acceleration Module (PAM) to extend the NVRAM technology to read caching. At the same time deduplication was introduced to the FAS family and was designed from day one to work in conjunction with the PAM cards.

As of January 31, 2017, the latest generation of the All Flash FAS, A700, currently is the #3 SPC-1 for performance system, and #1 in price per IO and price per GB.

SANTRICITY: As of January 31, 2017, this is currently leader in SPC-2 for performance, price per IO, price per GB.

<u>Requirement</u>

8.2.2.3. Interoperability and Ecosystem
8.2.2.3.1. The following OS must be supported by the storage array

<u>Response</u>

Please see the chart below.

OS Supported by the Storage Array		
OS	**ONTAP**	**SANTRICITY**
8.2.2.3.1.1. Apple Mac OS 10.x.x	Yes, CIFS and NFS are supported. ISCSI and FCP are not supported on Mac Clients.	Not directly attached via ISCSI or FCP, but is supported behind an application.

OS Supported by the Storage Array		
OS	**ONTAP**	**SANTRICITY**
8.2.2.3.1.2. Microsoft Windows 2008 R2 and newer	Yes, Microsoft Windows 2008 R2 and newer is supported.	Yes, Microsoft Windows 2008 R2 and newer is supported.
8.2.2.3.1.3. Oracle Linux Server 6.x	Yes, Oracle Linux Server 6.x is supported.	Yes, Oracle Linux Server 6.x is supported.
8.2.2.3.1.4. Red Hat Enterprise Linux 5.x or newer	Yes, Red Hat Enterprise Linux 5.x or newer is supported.	Yes, Red Hat Enterprise Linux 5.x or newer is supported.
8.2.2.3.1.5. Hadoop File Management System	Yes, Hadoop File Management System is supported.	Yes, Hadoop File Management System is supported.

Requirement

8.2.2.3.2. The following host protocols must be supported
8.2.2.3.2.1. iSCSI, FCoE, NFS, CIFS, Ethernet (on an as-needed basis, REST/HTTP and/or Infiniband may be included). Please specify versions and speeds supported.

Response

ONTAP: The following versions are supported: CIFS (SMB1,2,2.1,3), NFS (v3,v4,v4.1), iSCSI (1,10,40), FC (4,8,16,32), FCoE (10). It also supports HTTP/S, RESTAPI but for management only.

SANTRICITY: The following versions are supported: iSCSI (10), FC (8, 16), SAS (6, 12), InfiniBand (40, 56). It supports HTTP/S, RESTAPI but for management only.

Requirement

8.2.2.3.3. Array must support 10GB Ethernet (1 0Base-SR using LC connectors) with dual 10GB interfaces.

Response

ONTAP/SANTRICITY: Yes, this is supported.

Requirements

8.2.2.3.4. Please list the third-party independent software vendors (ISVs) that you have integrated with for backup/recovery. Provide specific details on snapshots and replication integration.
8.2.2.3.5. Please list the third-party ISVs that you support for archiving and any specific array-level features that help in the integration.

Response

All Software packages below come with full integration for FAS and ESeries Snapshots:

- Microsoft Exchange
- Microsoft SQL
- Microsoft SharePoint
- Microsoft Hyper-V
- Microsoft Windows 2008 R2 and Later
- VMWare
- Oracle (Unix and Windows)
- SAP (Unix and Windows)
- Redhat Linux 5 and later
- AIX
- Solaris
- Linux (generic)

Requirement

8.2.2.3.6. Are you providing agents that tightly integrate with the following products for the purposes of simplifying archiving, backups and DR testing, and for improving failback, recovery point objectives and RTOs? Specify the versions that you support:

Response

Please see the chart below.

Supported Versions	
Version	**Response**
8.2.2.3.6.1. CommVault Simpana	Yes, through Intelisnap 10+.
8.2.2.3.6.2. EMC NetWorker	No.
8.2.2.3.6.3. Microsoft Exchange	Yes, for Exchange 2010 and later.
8.2.2.3.6.4. Microsoft SQL Server	Yes for SQL Server 2005 and later.
8.2.2.3.6.5. Microsoft Hyper-V	Yes for Hyper-V 2003 EE and later.
8.2.2.3.6.6. Oracle Database	Yes, individual support is based on the underlying OS and application system. Currently the oldest version of Oracle still under support model is 9.1 R2. All versions after are supported based on OS.
8.2.2.3.6.7. Red Hat KVM	Yes, there is limited support with RHEV 3.2.
8.2.2.3.6.8. Symantec Enterprise Vault	Yes, as a target library.
8.2.2.3.6.9. Symantec NetBackup	Yes for NetBackup 7.7 and later.
8.2.2.3.6.10. VMWare ESXi	Yes for ESXi 5.0 and later.

Requirement

8.2.2.3.7. Describe the integration of your solution with cloud management platforms. Specifically, does your solution support APis provided by cloud management platforms (such as VMWare vCloud Suite, Microsoft System Center or Open Stack)?

Response

ONTAP: This is able to move data between several cloud providers in several manners. ONTAP Cloud is a version of Ontap that can be purchased directly from cloud provider market places and is treated as an instance owned and managed by the customer. This allows native storage replication to a cloud provider.

NDMP Cloud Extension (NCE) has the ability to use NDMP to move data from CDOT to any S3 bucket.

ESeries: This does not natively support CDMI/S3, but instead leverages client software for data movement.

StorageGrid uses CDMI to move data from Ontap or the ESeries to any CDMI/S3 object repository based on customizable policies.

Requirement

8.2.2.3.8. Do you provide support for any public cloud APis (such as Amazon S3 API, OpenStack Swift or CDMI)?

Response

This is not natively supported, but can be through StorageGrid.

Requirement

8.2.2.4. Manageability
8.2.2.4.1. The array must support syslog, Simple Network Management Protocol (SNMP) traps, email and/or "Call-Home" notification. Provide an overview of how this is securely enabled.

Response

ONTAP/SANTRICITY: HTTPS is utilized to collect information on the system configuration and post this to the NetApp support center. This same mechanism is also used to alert in the event of a hardware failure and generate cases automatically. This feature can also be used to report back performance information if desired.

Requirement

8.2.2.4.2. The array must support online configuration of alert threshold, severity level and notification method for each type of event.

Response

ONTAP/SANTRICITY: Yes, this is supported.

Requirement

8.2.2.4.3. Describe array management options:

Response

Please see the below chart.

Array Management Options		
Option	**ONTAP**	**SANTRICITY**
8.2.2.4.3.1. GUI-based single pane of management console	Yes, this is an option.	Yes, this is an option.
8.2.2.4.3.2. CLI	Yes, this is an option.	Yes, this is an option.
8.2.2.4.3.3. Security features: SSL, SSH, and others	Yes, these are available.	Yes, these are available.
8.2.2.4.3.4. Audit log	Yes, this is available.	No. The system does not contain a native file system. File auditing would be provided by the host that owns the file system that resides on the LUNs.

Requirement

8.2.2.4.4. The array must be able to generate capacity reports that contain the below information:

Response

Please see the below chart for information included on reports.

Capacity Reports		
Information	**ONTAP**	**SANTRICITY**
8.2.2.4.4.1. Total raw capacity	Yes.	Yes.
8.2.2.4.4.2. Total usable capacity	Yes.	Yes.
8.2.2.4.4.3. Percentage of allocated capacity	Yes.	Yes.
8.2.2.4.4.4. Percentage consumed and subscribed for thin pools	Yes.	Yes.
8.2.2.4.4.5. Total usable capacity per directory tree	Yes.	No. The system does not contain a native file system. File capacity would be provided by the host that owns the file system that resides on the LUNs.
8.2.2.4.4.6. Time/Date	Yes.	No. The system does not contain a

Capacity Reports		
Information	**ONTAP**	**SANTRICITY**
incremental growth progression on a per directory tree basis		native file system. File capacity would be provided by the host that owns the file system that resides on the LUNs.

Requirement

8.2.2.4.5. The array must be able to generate performance reports that contain the information below:

Response

Please see the below chart for information included on reports.

Performance Reports		
Information	**ONTAP**	**SANTRICITY**
8.2.2.4.5.1. CPU utilization	Yes.	Yes.
8.2.2.4.5.2. Cache utilization	Yes.	Yes.
8.2.2.4.5.3. Usage over time (historical)	Yes, depending on the length of time, OnCommand Performance (no cost) is recommend to be installed to provide performance archive data further back than 4 weeks.	Yes.
8.2.2.4.5.4. Internal/External communications	Yes.	Yes.
8.2.2.4.5.5. Front-end director utilization	N/A. The systems are not built on a gateway/datamover topology. All data is owned by the controlling node.	N/A. The systems are not built on a gateway/datamover topology. All data is owned by the controlling node.
8.2.2.4.5.6. Back-end director utilization	N/A. The systems are not built on a gateway/datamover topology. All data is owned by the controlling node.	N/A. The systems are not built on a gateway/datamover topology. All data is owned by the controlling node.
8.2.2.4.5.7. Hot spots and heat map	Yes.	Yes.
8.2.2.4.5.8. Server to HDD visibility of IOPS	Yes, though utilization is evenly distributed across all drives within an aggregate. Utilization is reported based on per host utilization to a given volume.	Yes, though utilization is evenly distributed across all drives within a drive pool.

Requirement

8.2.2.4.6. Describe problem determination capabilities to identify and isolate performance issues or bottlenecks by individual users, files, volume groups, ports or any other structures. Are such reports graphical user interface (GUI) or command-line interface (CLI)-based?

Response

ONTAP: ONTAP supports both CLI and GUI real time based performance reporting tools. Each view can be customized to look into a specific element of the environment or as a holistic view of the aggregated environment.

SANTRICITY: Provides CLI and GUI real time based performance reporting tools.

Requirement
8.2.2.4.7. Describe the auto-configuration features that exist to ease set-up, configuration and operations

Response
ONTAP: Deploy new enterprise solutions, such as SAP HANA, in under 10 minutes by leveraging fast provisioning templates for FAS systems. New fast provisioning workflows enable you to deploy new storage systems for the following key workloads—SAP HANA, Oracle, SQL Server, VDI, and VMware—in under 10 minutes from power on to serving data. All of these workflows can be run through the onboard web manager.

SANTRICITY: SANtricity deployment can be done in under 15 minutes using the automated provisioning manager.

Requirement
8.2.2.4.8. Describe any tools you offer to automate the storage provisioning process. Elaborate on integration with third-party orchestration software.

Response
Both FAS8200 and E5600 can leverage Work Flow Automation to automate storage, fabric, and application layer deployments.

Most enterprise Orchestration software also provides NetApp plugins for their orchestration workflows. NetApp also provides open API SDKs to allow for additional customization as desired.

Requirement
8.2.2.4.9. What capabilities are built into the system for secure multi-tenancy, self-service and metering?

Response
ONTAP: ONTAP is built from the ground up to provide secure multi-tenancy through Storage Virtual Machines (SVMs). This allows independently secured storage devices to be provisioned that can be authenticated through different central ID management solutions, such as Active Directory/LDAP. Each SVM can then be managed by different groups that do not need to be the primary storage administration team. Each SVM can additionally have differing Quality of Service levels applied.

SANTRICITY: Multi-Tenancy is provided through the client application layer as the system does not own the file system.

Requirement
8.2.2.4.1 0. Can capacity chargeback reports be generated?

Response
ONTAP: Yes, through OnCommand Unified Manager.

SANTRICITY: No.

Vendor neutral, holistic monitoring, reporting, and charge back structure can be provided through OnCommand Insight.

Requirement

8.2.2.4.11. Describe the support that exists for monitoring of performance metrics, capacity and hardware healthiness on the SAN infrastructure.

Response

ONTAP: Monitoring can be done on-box for the storage controller and its ports but is unable to monitor the fabric or end host.

SANTRICITY: Monitoring can be done on-box for the storage controller and its ports but is unable to monitor the fabric or end host.

Vendor neutral, holistic monitoring, reporting, and charge back structure can be provided through OnCommand Insight.

Requirement

8.2.2.4.12. What quality of service (QoS) features does your system support, and at what level of granularity?

Response

ONTAP: QoS is fully supported on ONTAP. It can be set on the volume, LUN, a file, of the Storage Virtual Machine. QoS can be established by throughput or IOPs.

SANTRICITY: Does not support QoS

Requirement

8.2.2.4.13. Can real-time storage performance reports be generated? If so, what granularity?

Response

ONTAP: ONTAP supports both CLI and GUI real time based performance reporting tools. Each view can be customized to look into a specific element of the environment or as a holistic view of the aggregated environment.

SANTRICITY: Provides CLI and GUI real time based performance reporting tools.

Requirement

8.2.2.4.14. Can capacity trending reports be generated for the purpose of capacity planning?

Response

ONTAP/SANTRICITY: Yes, capacity trending reports can be generated for capacity planning.

Requirement

8.2.2.4.15. Describe the support that exists for ad hoc reports and the type of customization that is possible.

Response

ONTAP: OnCommand Unified Manager stores historic tending information in a local database and can be used for any reporting needs.

SANTRICITY: 30 days of historic information is stored on the system and can be exported for custom reports.

Requirement

8.2.2.5. Performance
8.2.2.5.1. Tier-1: The proposed storage array must be able to meet the below-mentioned IOPS, throughput, and response time requirement.

Response

Storage Array Requirements		
Requirement	ONTAP	SANTRICITY
8.2.2.5.1.1. Peak IOPS of "20000" with a response time < "20" ms without cross-site data replication.	Yes.	Yes.
8.2.2.5.1.2. The array must support non-disruptive disk, disk enclosure, cache, front-end and back-end adapter upgrade.	Yes.	Yes.
8.2.2.5.1.3. Must be able to apply firmware upgrades in a non-disruptive manner and the rollback options of firmware and software upgrades.	Yes.	Yes.
8.2.2.5.1.4. The storage array must have a complete cache protection mechanism such as a battery or similar in the event of power loss.	Yes.	Yes.

Requirement

8.2.2.5.1.5. Describe the process of rebuilding data on a failed HDD or SDD. Specifically, how is the spare drive identified, and how is the user notified? Also, describe any capability to accelerate the rebuilding process and provide a range of rebuild times by HDD or SSD capacity.

Response

ONTAP: When disk failures occur, generally only a small fraction of the drive capacity is corrupted (less than 1% to 2%). Data ONTAP detects this and immediately begins bulk copying the 98% to 99% of the uncorrupted data to a global spare. RAID reconstruction then occurs only on the corrupted data, speeding reconstruction times and recovery on the new drive. Because of the unique reconstruction lay out, the first drive failure does not incur performance impact like is seen in a traditional RAID 6.

Capacity	Type	Zeroing (hr)	Rapid Recovery (hr)	Reconstruction (hr)
3.8TB	SSD	1.9	3.8	5.7
10TB	NL-SAS	22	92	100

SANTRICITY: DDP is a modified RAID 6 that provides better performance and minimizes impact on disk rebuilds.

- DDP dynamically distributes data, spare capacity, and parity information across a pool of drives. An intelligent algorithm defines which drives should be used for data placement (seven patents pending). Data is dynamically recreated/redistributed as needed to maintain protection/distribution. Current industry average for NL-SAS rebuilds is 1TB / 24 hours. With DDP a 180-drive disk pool critical segment is rebuilt in less than 60 minutes based on load. On large drives, such as the 10TB NL-SAS in this solution, DDP can reduce rebuild times from days on a typical solution to hours. This is critical to employ an advanced rebuild algorithm when utilizing large numbers of drives of this size and type.

Requirement

8.2.2.5.1.6. What is the guaranteed availability (four nines, five nines, or six nines)?

Response

ONTAP: Five nines

SANTRICITY: Six nines

Requirement

8.2.2.5.1.7. What is the time required to perform a successful, non-disruptive microcode update?

Response

ONTAP/SANTRICITY: This varies based on code release. Autosupport utilities are able to provide estimations from the Upgrade Advisor on expected upgrade times. Averages range from 30-60 minutes. All upgrades are non-disruptive.

Requirement

8.2.2.5.1.8. What fault isolation techniques exist to ensure high availability?

Response

NetApp high-availability storage systems have no single point of failure. Each system contains dual controllers (active-active), and each controller has multiple independent paths to all disks. The active-active controller configuration means that if one controller fails, its partner assumes its identity and workload. Additionally, each controller and disk shelf has dual, hot-swappable power and cooling. Controllers (after cluster takeover), disk, power supplies, and fans can be non-disruptively swapped. If NetApp RAID-DP® is used (strongly recommended), even a double-disk failure within the same RAID group is non-disruptive.

Field-replaceable units are internal to each controller and include the system board, memory, NVRAM, and expansion cards (HBAs, NICs, and so on). These internal components are not hot swappable while the controller is active. However, each controller can be gracefully shut down and its partner allowed to take its identity and workload. This enables the controller's internal components to be replaced and then rebooted into the cluster to resume normal operation.

Operating system upgrades can be downloaded and installed while a controller is active. However, to activate the upgrade, a reboot is required. This can be performed non-disruptively. Disk and shelf firmware (microcode) can also be installed non-disruptively.

Requirement

8.2.2.5.1.9. Describe the inbuilt protection techniques for preventing data corruption.

Response

ONTAP/SANTRICITY: Background media scrubs ensure bit integrity. Background disk maintenance center runs periodic full disk checks to ensure the drive is in full working order. A failure of either of these checks results in the disk being marked as a failure and the data moved to an active spare. This process reduces rebuild times as the average corrupted section is less than 1% to 2%

Requirement

8.2.2.5.1.10. Describe the replication features available in your product and elaborate on your support for different replication methodologies.

Response

ONTAP: Replication is handled via SnapMirror for full remote Disaster Recovery. SnapVault provides remote backup/versioning replication. Both of these technologies are data efficiency aware.

FAS5600: Provides remote replication as either synchronous mirroring in which both volumes function as a single write source or asynchronous mirroring in which versioned updates are sent to the destination.

Requirement
8.2.2.5.1.11. Outline the various techniques that are available to reduce network bandwidth consumption during replication.

Response
ONTAP: All replications are deduplication and compression aware in order to reduce the amount of data that is required to be transferred. Mirrors are based on Snapshots, which only track changed blocks. This allows a further reduction in bandwidth required.

SANTRICITY: Asynchronous mirrors are based on changed blocks to reduce bandwidth requirements.

Requirement
8.2.2.5.1.12. Explain how data corruption exposures are minimized during replication.

Response
ONTAP: Replication is performed over IP and uses a combination of TCP integrity checks to ensure data integrity along with block checksum on the destination to ensure the data received it uncorrupted.

SANTRICITY: Replication is performed over FC or IP and uses their underlying fabric for data integrity checks.

Requirement
8.2.2.5.1.13. Describe the snapshot capabilities, clearly outlining the product features and differentiators.

Response
Snapshot technology is available from a variety of data storage vendors but not all snapshots are created equal. NetApp Snapshot™ technology enables IT administrators to create space efficient point-in-time copies of virtual machines or entire data stores. Then, using SnapRestore®, you can restore from these backup copies at any level of granularity—single files, LUNs, or entire volumes—simply and quickly when required. Many copies can be made at any time increment in less than one second, with no performance impact, no matter how many Snapshot copies are taken. These are not full copies of data; they are only tracking changes and are very efficient in terms of overall storage capacity. Restores can be done rapidly from any of the copies, providing with an exceptional recovery time objective (RTO).

Up to 255 Snapshot copies can be created automatically or manually per volume to perform backups as often as needed—daily, hourly, etc. More frequent backups will reduce data lost since the last backup was taken. This enhances the recovery point objective (RPO). Each Snapshot copy is RAID protected for reliable backup. Files, LUNs, and VM copies are not limited to 255—they can be in 1000s.

NetApp Snapshots utilize a save changes to repository on write vs. a copy of write scheme most vendors utilize. This reduces I/O requirements and allows for granular snapshots where only the difference between the old data and new data is stored. This is highly efficient and whether you take one snapshot a day or one an hour, the utilization is the same.

Manage Snapshot Capabilities with SnapManager

NetApp SnapManager tools make it easy manage snapshot capabilities. The SnapManager product suite integrates with industry standard enterprise applications, including Microsoft Exchange, Microsoft SharePoint, Microsoft SQL, Oracle, and SAP. These tools allow administrators to streamline data management and simplify configuration, backup, and restore operations. Snapshots of virtual machines (VMs) can be managed using NetApp's Virtual Storage Console for Citrix XenServer and VMware, including SnapManager for Hyper-V. NetApp has the tools to simplify and automate the application and virtual storage environment, including centralized data protection for virtual machines, increased operational efficiency, and backup and restore management. Command line and scripting options are also available.
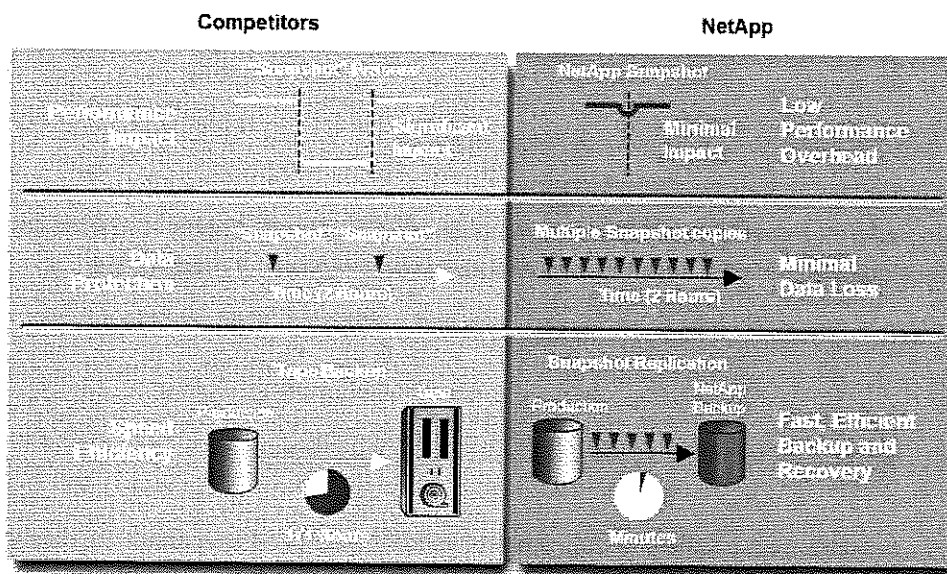
(Pictured above) NetApp Snapshot technology – Protect more of your data with minimal performance impact and consumption of storage space. You can take a Snapshot copy in less than a second while applications are running, regardless of volume size or level of activity on your NetApp system.

Real Customer Examples

- Anadarko Petroleum Corporation uses NetApp Snapshot technology to reduce backup times by 90% and recover 18 times faster. Backups that used to take 28 to 34 hours are now completed in no more than 2.5 hours. Recovery time has been reduced from 72 hours to just 4 hours.
- Using NetApp Snapshot technology, the Charlotte, North Carolina, law firm Robinson, Bradshaw, and Hinson is able to complete multiple point-in-time backups of its data on the fly with no system drag and no downtime. This enabled them to cut RPO by 96% and reduce RTO from weeks to minutes.

<u>Requirement</u>

8.2.2.5.1.14. What is the maximum number of snapshots that can be handled within the storage array?

<u>Response</u>

ONTAP: 255 per volume, no limit per node.

SANTRICITY: 255 Per Volume, no system limit.

Requirement

8.2.2.5.1.15. What is the maximum number of snapshots per LUN or volume?

Response

ONTAP: 255 per volume, no limit per node.

SANTRICITY: 255 Per Volume, no system limit.

Requirement

8.2.2.5.1.16. Describe how snapshot restore can be effected and any integration with third party software.

Response

Snapmanager and SnapCenter product suite allow application integration with SnapShot technology to create application consistent snapshots.

Requirement

8.2.2.5.1.17. Describe in detail the disaster recovery process of the proposed solution. Also, specifically answer the following questions:

Response

Please see responses to the below questions regarding the disaster recovery process.

Requirement

8.2.2.5.1.17.1. What is the range of RTOs and RPOs supported?

Response

RTO and RPO are normally mandated by federal guidelines and / or application needs. NetApp is able to support down to 0 RTO/RPO.

Requirement

8.2.2.5.1.17.2. At what distance is the solution provided?

Response

Asynchronous replication is performed over TCP/IP connections and limited only by supported uplink speed and amount of data delta.

Synchronous replication is handled over dedicated fiber fabrics and normally limited by fabric latency. Average maximum fabric distance in normally 200km.

Requirement

.8.2.2.5.1.17.3. What is the performance impact of your solution?

Response

There is a minimal impact to write latency that is incurred due to the line latency over distance. Synchronous replication does not support line latency greater than 3ms.

Requirement

8.2.2.5.1.17.4. What, if any, is the average data loss associated with your solution?

Response

No data loss is accepted by the storage OS. In the event that a block is missing, depending on the layer that catches the loss, the data is rebuilt or retransmitted.

Requirement

8.2.2.5.1.18. Describe any other resiliency features not mentioned above that make your storage array more resilient or specific features available only with your product.

Response

While our definitions are described in the answers above here is a recap of the major differentiators:

AFF/FAS with Data OnTap: This product's major differentiators include multi-protocol support with deduplication and compression supported across all SAN and NAS protocols. Secure Multi-Tenancy and FIPS encryption at the individual Volume level built into the product. Few vendors have a singular product with all of these features. As an additional differentiator, NetApp AFF is the #1 fastest growing Flash storage in the industry.

E-Series with Santricity: With almost 1Million units shipped, NetApp E-Series is the #1 sold SAN storage product in the industry with more units sold than any other vendor or product. This is a result of its unique extreme performance, scalability, and rack density. This success is coupled with FIPS security capability and DDP, a NetApp patented RAID design which allows not only for extreme performance, but extreme reliability and rebuild times of large drives up to eight times faster than traditional RAID-6 solutions. Quick rebuilds of large drives are critical to solutions such as this where large quantities of high capacity drives are employed.

8.2.2.5.2. Tier-1

Requirement

8.2.2.5.2.1. The proposed storage array must be able to meet the below-mentioned IOPS, throughput and response time requirement.

Response

Please see the below chart.

Storage Array Requirements		
Requirement	ONTAP	SANTRICITY
8.2.2.5.2.1.1. Peak IOPS of "20000" with a response time< "20" ms without cross-site data replication.	Yes.	Yes.
8.2.2.5.2.1.2. Peak IOPS of "20000" with a response time of< "30" ms with cross-site data replication.	Yes.	Yes.
8.2.2.5.2.1.3. Must deliver an aggregated throughput of "600" MB/s as a cluster of per-node basis.	Yes.	Yes.
8.2.2.5.2.2. The system must meet the following IOPS, throughput requirements "18,456" respectively in the next "5" year period.	Yes.	Yes.
8.2.2.5.2.3. The system latency must be less than "30" ms during the "5" year period.	Yes.	Yes.

Requirement

8.2.2.5.2.4. Describe the ability to perform priority input/output (110) control for critical applications.

Response

NetApp Storage QoS (Quality of Service) can help manage risks around meeting performance objectives. You can use Storage QoS through System Manager or the CLI to limit the throughput to workloads and to

monitor workload performance. To address performance problems you can limit workloads proactively or reactively.

OnCommand Workflow Automation provides a Service Level Objective (SLO) workflow pack. The SLO workflow pack provides a framework for implementing SLOs. Using the SLO workflow pack, storage service providers can optimize utilization, performance modelling, trend analysis, and asset planning.

Requirement

8.2.2.5.2.5. What is the highest customer aggregate throughput achieved so far by a node (for a scale-out architecture) or a cluster/namespace (for a scale-up architecture)?

Response

ONTAP: SPC-1 Results – 2,400,059IOPS (#3 SPC-1 IOPS)

SANTRICITY: SPC2 Results – 11,352MBPS (#2 $/SPC-2 MBPS)

Requirement

8.2.2.5.2.6. Provide independent performance benchmark data (such as SPC-1 or SPEC SFS) for IOPS, throughput, response time. Please provide full information, including the year of testing, model number, configuration and workloads.

Response

ONTAP: SPC-1 Results – 2,400,059IOPS

Additional benchmark data can be found
at: http://www.storageperformance.org/results/benchmark_results_spc1/spc1_v1_results_netapp/spc1_v1_results_netapp_a02002/A02002_ES.pdf

SANTRICITY: SPC2 Results – 11,352MBPS

Additional benchmark data can be found
at: http://www.storageperformance.org/benchmark_results_files/SPC-2/NetApp/B00078_NetApp_EF560_All-Flash-Array/b00078_NetApp_EF560_All-Flash-Array_SPC-1_executive-summary.pdf

8.2.2.5.3. Tier-3

Requirement

8.2.2.5.3. 1. The proposed storage array must be able to meet the below-mentioned IOPS, throughput and response time requirement:
8.2.2.5.3.2. Peak IOPS of "1 0000" with a response time < "20" ms without cross-site data replication.
8.2.2.5.3.3. Peak IOPS of "10000" with a response time of< "30" ms with cross-site data replication.
8.2.2.5.3.4. Must deliver an aggregated throughput of "300" MB/s as a cluster of per -node basis.
8.2.2.5.3.5. The system must meet the following IOPS, throughput requirements "6, 152" respectively in the next "5" year period.
8.2.2.5.3.6. The system latency should be less than "30" ms during the "5" year period.

Response

******All Tier 3 answers are the same as Tier 1 as the proposed solutions underlying Storage Operating System and Hardware are the same. The difference between solutions is the storage media that backs the Storage OS. Please see the responses provided in Tier 1.**

8.2.2.5.4. Availability

Requirement

8.2.2.5.4.1. There must be no single point of failure (SPOF) within the storage array. Individual component failures (controller, port, cache, disk, enclosure, or any other vendor specific element) should not cause loss of data accessibility, data integrity, or a full array failure.

8.2.2.5.4.2. All hardware repair activities must be non-disruptive.

8.2.2.5.4.3. The array must support non-disruptive disk, disk enclosure, cache, front-end and back-end adapter upgrade.

8.2.2.5.4.4. Must be able to apply firmware upgrades in a non-disruptive manner and the rollback options of firmware and software upgrades.

8.2.2.5.4.5. The storage array must have a complete cache protection mechanism such as a battery or similar in the event of a power loss.

8.2.2.5.4.6. Describe the process of rebuilding data on a failed HDD or SDD. Specifically, how is the spare drive identified, and how is the user notified? Also, describe any capability to accelerate the rebuilding process and provide a range of rebuild times by HOD or SSD capacity.

8.2.2.5.4.8. What is the time required to perform a successful, non-disruptive microcode update?

8.2.2.5.4.9. What fault isolation techniques exist to ensure high availability?

8.2.2.5.4.1 0. Describe the inbuilt protection techniques for preventing data corruption.

8.2.2.5.4.11. Describe the replication features available in your product and elaborate on your support for different replication methodologies.

8.2.2.5.4.12. Outline the various techniques that are available to reduce network bandwidth consumption during replication.

8.2.2.5.4.13. Explain how data corruption exposures are minimized during replication.

8.2.2.5.4.14. Describe the snapshot capabilities, clearly outlining the product features and differentiators?

8.2.2.5.4.15. What is the maximum number of snapshots that can be handled within the storage array?

8.2.2.5.4.16. What is the maximum number of snapshots per LUN or volume?

8.2.2.5.4.17. Describe how snapshot restore can be effected and any integration with third party software?

8.2.2.5.4.18. Describe in detail the disaster recovery process of the proposed solution. Also, specifically answer the following questions:

8.2.2.5.4.18.1. What is the range of RTOs and RPOs supported?

8.2.2.5.4.18.2. At what distance is the solution supported?

8.2.2.5.4.18.3. What is the performance impact of your solution?

8.2.2.5.4.18.4. What, if any, is the average data loss associated with your solution?

Response

ONTAP: Yes, our proposed solution meets this requirement.

SANTRICITY: Yes, our proposed solution meets this requirement.

Please note: The underlying Storage Operating System and Hardware for both Tier 1 and Tier 3 are the same. Please see Tier responses for more detailed information.

Requirement

8.2.2.5.4.7. What is the guaranteed availability (four nines or five nines or six nines)?

Response

ONTAP: Five nines

SANTRICITY: Six nines

Requirement

8.2.2.5.4.19. Describe any other resiliency features not mentioned above that make your storage array more resilient or specific features available only with your product?

Response

While our definitions are described in the answers above here is a recap of the major differentiators:

AFF/FAS with Data OnTap: This product's major differentiators include multi-protocol support with deduplication and compression supported across all SAN and NAS protocols. Secure Multi-Tenancy and

FIPS encryption at the individual Volume level built into the product. Few vendors have a singular product with all of these features. As an additional differentiator, NetApp AFF is the #1 fastest growing Flash storage in the industry.

E-Series with Santricity: With almost 1Million units shipped, NetApp E-Series is the #1 sold SAN storage product in the industry with more units sold than any other vendor or product. This is a result of its unique extreme performance, scalability, and rack density. This success is coupled with FIPS security capability and DDP, a NetApp patented RAID design which allows not only for extreme performance, but extreme reliability and rebuild times of large drives up to eight times faster than traditional RAID-6 solutions. Quick rebuilds of large drives are critical to solutions such as this where large quantities of high capacity drives are employed.

8.2.2.5.5. Security

Requirement

8.2.2.5.5.1. The proposed solution must support hardware-based data encryption. Describe whether you provide native encryption or whether it is through third-party integration.

Response

All systems meet FIPS140-2 requirements for crypto module and FIPS 197 for encryption requirements. Encryption is provided natively by the storage system and only requires a third-party key manager to secure the keys. An on-box key manager can be used however based on FIPS140-2 requirements this cannot be met by having AK and data in the same crypto source.

Requirement

8.2.2.5.5.2. The proposed storage provisioning, monitoring and resource management tools must support role-based access control (RBAC).

Response

ONTAP/SANTRICITY: RBAC is fully supported through AD, LDAP, and local users for management and reporting functionality.

Requirement

8.2.2.5.5.3. The storage solution must be compliant with Criminal Justice Information Services (CJIS) requirement. How does your storage solution meet this requirement?

Response

The solution meets CJIS Security Policy (5.5) by providing the following mechanism for CJI.

- FIPS140-2 Data at Rest Crypto Module
- FIPS197 Data Encryption
- SSH
- AES (128-256)
- TLS (128-256)

Requirement

8.2.2.5.5.4. What are the default roles that are provided in your solution?

Response

ONTAP supports various methods for access control. In all cases, roles can be assigned that restrict or permit various operations. Custom roles can also be defined.

Typical roles and capabilities for administration of NetApp storage systems.

Name	Description	Role
Administrators	Fully administer the system	Admin
Backup operators	Special file permission to back up files	Backup, none
Compliance administrators	Compliance (NetApp SnapLock®) operations	Compliance
Guest	Guest access	None
Power users	Entry-level administrators	Power
Users	Local users	Audit

Requirement

8.2.2.5.5.5. The proposed storage administration tools must be able to generate audit logs to keep track of user logons, unauthorized login attempts and the changes made by users.

Response

NetApp products are equipped with strict Role Based Access Control measures to control administrative access, as well as secure protocols, audit logging, and industry standard encryption.

As the #1 provider of data storage and management to the U.S. Federal government, NetApp understands the importance of security. Their history reflects an ongoing commitment to security certification and to the confidentiality, integrity, and availability needs of customers and partners. The Common Criteria certification is widely embraced as the international standard (ISO/IEC 15408) for IT Security Evaluation. In 2005, NetApp became the first storage provider to achieve Common Criteria certification for its core operating system ONTAP. ONTAP is the storage industry's #1 branded operating system. In support of the US Department of Defense (DoD) and the Defense Information Systems Agency (DISA), NetApp's contributions led to the development of the Unified Capabilities (UC) requirements for a Data Storage Controller (DSC). In 2012, NetApp became the first storage provider to be certified and listed on the UC Approved Products List (APL). The in-progress evaluation of ONTAP 8.2 affirms NetApp's continued commitment to the Common Criteria standard. Please refer to Communications Security Establishment Canada (CSEC) Products in Evaluation.

NetApp takes the security of customers very seriously, and follows a security life cycle model for the integrity of our solutions. Their kernel and architecture were specifically chosen to provide reliability and security in the three general categories of concern:

- **Confidentiality.** Keeping customer data secret
- **Integrity.** Preventing unauthorized changes to customer data
- **Availability.** Making sure customer data is available (resist Denial of Service Attacks)

Requirement

8.2.2.5.5.6. How access to the audit and system logs is securely implemented?

Response

RBAC roles can be created that limit access to audit logging. Audit logs can also be offloaded into audit services, such as Splunk.

Requirement

8.2.2.5.5.7. Describe the access control settings outlining any integration with third-party LDAP/AD systems.

Response

ONTAP fully integrates into AD/LDAP as a client service machine. This is controlled through a Storage Virtual Machine and allows full RBAC setting on domain accounts. Each SVM can be independently integrated into differing AD/LDAP domains with no risk of cross authentication unless allowed at the AD/LDAP layer.

Requirement

8.2.2.5.5.8. Describe the support for third-party anti-malware software.

Response

NetApp has partnered with leading antivirus vendors to offer combined solutions to detect and prevent the spread of malicious virus code before data is compromised. This tight integration means that the antimalware solution works in lockstep with the storage system.

Requirement

8.2.2.5.5.9. Describe the capability to perform data erasure within the storage and explain the data erasure mechanism.

Response

NetApp systems have mechanisms to predict the failure of disks with high probability and to outsource the data to replacement disks before a defect occurs. This mechanism ensures that only the hard disks are marked as defective and sent back to the manufacturer if they are really no longer accessible. Such plates could be extracted bit by bit only with disproportionately high expenditure (disassembly, change of mechanical and electronic components, possibly even analysis of the surface structure under the microscope). Even then, this data would not be interpretable because a disk taken alone contains only a part of a strip of data.

Non-returnable disk: To prevent any residual risk, NetApp offers the option of "non-returnable disks". This is a maintenance contract, in which defective plates are not removed but are destroyed by the customer.

Disk Sanitization: NetApp provides a disk reset feature in which the data on the disk is destroyed by means of Disk Sanitizing. This method meets the requirements of US DoD Standard 5220.22-M.

8.2.2.5.6. General Software Requirements

Requirement

8.2.2.5.6.1. Offeror shall provide specific software versions recommended for each class of equipment, including release notes.

Response

ONTAP: Recommend OS Release 9.1. **SANTRICITY:** Recommend OS Release 8.30.10.01 Since release notes are lengthy documents, inclusion of these documents would violate the page limit laid out in the RFP. As such, we have not included them in our response, but we can provide the Release Note documents upon request.

Requirement

8.2.2.5.6.2. Offeror shall include documentation regarding open bugs or issues in the software versions proposed, ordered by priority

Response

All bug reports are considered NetApp confidential and available for review by NetApp employees and existing NetApp customers only on the Support Site. From the NetApp Support Site, customers can filter via the bug tool to find any existing bugs by platform and also configure bug alerts based upon your specific configuration. As of March 1, there is only one (1) ONTAP 9.1 bug with a Level 1 severity.

8.2.2.5.7. Physical Requirements

Requirement

8.2.2.5.7.1. Floor space to support the proposed solution
8.2.2.5.7.2. Floor loading and elevation requirements

Response

Please see NetApp Environmental Information in the appendix for full weight requirements.

Requirement

8.2.2.5.7.3. Raised-floor requirements
8.2.2.5.7.4. Minimum ceiling height

Response

Standard rack dimensions if using a NetApp Rack are as follows:

78.75" (200cm)/23.6" (60cm)/44.3" (112.5cm)

Requirement

8.2.2.5.7.5. Location of network interfaces (e.g., front, rear)

Response

All connectivity is done from the rear of the unit.

Requirement

8.2.2.5.7.6. Options for mass termination of cables

Response

Solution includes cable management brackets.

8.2.2.5.8. Environmental Requirements

Requirement

8.2.2.5.9. System power circuit breaker panel location

Response

All power inlets are on the back for the system chassis and disk shelves.

Requirement

8.2.2.5.1 0. Lighting requirements

Response

This is not applicable based on our proposed solution.

Requirement

8.2.2.5.11. Long- and short-term environmental ranges that the system can tolerate, including the:

Response

Please see the below chart for environmental information.

Environmental Ranges	
Requirement	Response
8.2.2.5.11.1. Acceptable temperature range	The acceptable temperature range is 5°C to 45°C (41°F to 113°F) at <= 3,000m (at <= 10,000') elevation.
8.2.2.5.11.2. Acceptable humidity range	The acceptable humidity range is 8% to 90% relative humidity, noncondensing (28°C wet bulb temperature).
8.2.2.5.11.3. Acceptable particulate contaminant range	Please see environmental information in the appendix.
8.2.2.5.11.4. Heat dissipation of the system at maximum configuration in British thermal units (BTUs) per hour	The heat dissipation at maximum configuration is 1,850 BTU (typical) to 2,130 BTU (worst case).
8.2.2.5.11.5. Required airflow (front to back, left to right, etc.)	Required airflow is front to back.
8.2.2.5.11.6. Specialized rack requirements	Standard IEC rack measurements are as follows: Width - 19" IEC rack-compliant (17.6", 44.7cm) Depth - 23.9" (28.9" with cable management)

8.2.2.5.12. Power Requirements

Requirement

8.2.2.5.12.1. Acceptable voltage and phase parameters ranges.
8.2.2.5.12.2. Power requirements power connectors, and circuit breaker panel requirements.
8.2.2.5.12.3. Recommendations for reserve power requirements in stand-by hours and battery capacity (ampere-hours), if an uninterruptible power supply (UPS) is proposed.
8.2.2.5.12.4. Centralized and local power and cooling requirements.

Response

This information is detailed in NetApp's Environmental Information in the Appendix.

8.2.2.6. WARRANTY, MAINTENANCE, AND TRAINING

8.2.2.6.1. Warranty

Requirement

8.2.2.6.1.1. Offeror shall specify the warranty periods for all solution

Response

All configurations are provided with 60 months maintenance pre-paid. Optional pricing is also included for 12 month and 36 months of prepaid warranty, but results in a higher cost over time.

Requirement

8.2.2.6.2. hardware, as well as the software associated with running the proposed systems and applications
Maintenance

Response

Yes, this is included.

Requirement

8.2.2.6.2.1. The Offeror must quote maintenance on a contractual basis-indicating the annual maintenance costs, software fees, caps (i.e., annual increases in hardware maintenance rates and software license fees) and discounts after warranty expiration.

Response

All solutions have been configured with 60 months 24 x7 x 4-hour NetApp Premium response support up front. This results in the lowest TCO over time and there is nothing additional to pay for the next 5-years for hardware or software support or warranty. Per the RFP requirements, we have also included pricing for 12 month and 36 month support up front with the corresponding annual renewal rates for pre, and post warranty periods. Additional details on NetApp support options are available on the following links.

http://www.netapp.com/us/services-support/services/support-services.aspx

http://www.netapp.com/us/media/ds-2700.pdf

Requirement

8.2.2.6.2.2. The quotes for system maintenance options are to include:
8.2.2.6.2.2.1.1. Hardware support including part replacement and return merchandise authorization (RMAs)
8.2.2.6.2.2.1.3. General technical support/assistance with operational and maintenance activities

Response

This is included.

Requirement

8.2.2.6.2.2.1.5. Define the number of factory-trained service technicians available through the local service depot (per physical data center location), and identify the centers from which technicians will be dispatched after hours, on holidays and during weekends.

Response

The City of Columbus can rely on NetApp CSD to resolve issues quickly, on a 24/7 basis. The CSD is organized on a regional, country, and city basis with overlapping service and parts coverage. On-site support is provided to the City of Columbus through a global network of engineers who have specialization in NetApp technologies. NetApp engineers include authorized service engineers (ASEs), qualified partners or official NetApp employees and field support engineers (FSEs), escalation engineers trained to the highest level of competency in the industry. Each of their 2,200 FSEs is regionally located so they can travel to the City of Columbus's site when specialized technical skill is required to solve an urgent issue. Over 250,000 customer systems rely on CSD support worldwide.

Local Parts Depots in Ohio include Brecksville, Worthington, and Dayton. Additional locations close to Columbus include Cranberry Township, PA; Indianapolis, IN, and Fort Wayne, IN.

Requirement

8.2.2.6.2.2.1.6. Provide a copy of the standard maintenance contract and details of optional extras.

Response

General Terms can be found at the following link: North America

Support Services Terms can be found here: Worldwide

Requirement

8.2.2.6.2.2.1.7. Describe committed response times and mean time to recovery (MTTR) by type of service disruption.

Response

Please see response in 8.2.2.6.2.

<u>Requirement</u>

8.2.2.6.2.2.1.8. Provide a copy of normal maintenance escalation procedures, and include communications with affected parties with names and contact details of all parties affected.

<u>Response</u>

NetApp has a standard methodology for case management. Cases can be initiated automatically by onsite NetApp systems through their AutoSupport technology, or they can be created by NetApp customers, partners, or other NetApp employees. All cases are assigned case owners who are typically based in NetApp's Technical Support Center. The following table defines Priority 1 and Priority 2 cases. A customer can request an increase in priority level at any time based on these definitions.

Priority definitions.

Priority	Description
P1	NetApp node, system, or cluster is down, unable to serve data, is in a state of frequent or repeating "panic" or "hang," or is in a state of degraded performance sufficient to prevent normal business operations. At this priority, both NetApp and the customer must commit to around-the-clock action and involvement by all necessary and appropriate personnel and systems until a mutually agreeable workaround is provided and normal business operations are restored.
P2	NetApp node, system, or cluster is experiencing an infrequent isolated or intermittent "panic" or "hang," or is in a state of degraded performance that allows business operations to continue, but at an inconsistent or less than optimal rate. At this priority, NetApp is committed to a commercially reasonable best effort to provide a workaround and/or to restore normal operations as quickly as possible.

Upon notification, a customer's P1 issue is escalated to a level of NetApp management that meets the notification guidelines in the following table. NetApp's objective is to use the most appropriate support resources to quickly correct the problem.

P1 notification matrix.

Elapsed Time	0 – 30 Minutes	1 Hour	2 Hours	4 Hours	8 Hours
Who is Notified at NetApp	TSC Duty Manager	TSC Group Manager	TSC Group Manager	TSC Group Manager	Senior VP of Global Support
		TSC Duty Manager	TSC Duty Manager	TSC Duty Manager	NetApp executives
			TSC Regional Director	TSC Regional Director	
				TSC VP	

Note: When a Priority 2 case is raised to a Priority 1, the time triggers for Priority 1 cases are activated.

For Ohio Valley, escalations points of contact are the local account management team and local field support manager:

Account Manager: Dave Franko, dave.franko@netapp.com, 614.203.4910

Account Systems Engineer: Bob Krause, robert.krause@netapp.com, 614.766.3676

Field Escalations Manager: John McLaren, john.mclaren@netapp.com, 614.766.3687

Requirement

8.2.2.6.2.2.1.9. Provide emergency contact number if normal channels of fault-reporting communications fail. Describe how that emergency contact number will be answered and by whom:

Response

The NetApp support center can always be reached via the toll free number: 888.4.NETAPP (888.463.8277)

In the event the support center cannot be reached, please contact the local account team and field escalations manager:

Account Manager: Dave Franko, dave.franko@netapp.com, 614.203.4910

Account Systems Engineer: Bob Krause, robert.krause@netapp.com, 614.766.3676

Field Escalations Manager: John McLaren, john.mclaren@netapp.com, 614.766.3687

Requirement

8.2.2.6.2.2.1.9.1. Are there any times or restrictions by day, week or month on this service?

Response

No, Support is 24/7/365 and is always available.

Requirement

8.2.2.6.2.2.1.9.2. What information will those answering a call have available?

Response

Standard information is available. A comprehensive list of this information can be provided upon request.

Requirement

8.2.2.6.2.2.1.9.3. Will they have specific information on the system being proposed for the organization?

Response

Yes, they have specific information on the system being proposed.

Requirement

8.2.2.6.2.2.1.1 0. Describe the procedures for software updates and upgrades; detail what, if any, costs would be associated with upgrades.

Response

Upgrades are included with system maintenance and can be done live while the system is in production, no down time is required.

Requirement

8.2.2.6.2.2.1.11. Define major and minor alarm conditions and how the system responds to each circumstance.

Response

Health-check analysis covers more than 80 warning and 600 notice categories, such as disk, motherboard, firmware, clustering, hardware configuration, and software configuration issues. Events are notifications that are generated automatically when a predefined condition occurs or when an object crosses a threshold. These events enable you to take action to prevent issues that can lead to poor performance and system unavailability. Events include an impact area, severity, and impact level.

Events are categorized by the type of impact area such as availability, capacity, configuration, or protection. Events are also assigned a severity type and impact level that assist you in determining if immediate action is required. You can configure alerts to send notification automatically when specific events or events of a specific severity occur. Obsolete, resolved, and informational events are automatically logged and retained for a default of 180 days. It is important that you take immediate corrective action for events with severity level Error or Critical.

Description of event severity types

Each event is associated with a severity type to help you prioritize the events that require immediate corrective action.

Critical - A problem occurred that might lead to service disruption if corrective action is not taken immediately.

Error - The event source is still performing; however, corrective action is required to avoid service disruption.

Warning - The event source experienced an occurrence that you should be aware of. Events of this severity do not cause service disruption, and immediate corrective action might not be required.

Information - The event occurs when a new object is discovered, or when a user action is performed. For example, when any storage object is deleted or when there are any configuration changes, the event with severity type Information is generated.

Description of event impact levels

Each event is associated with an impact level (Incident, Risk, or Event) to help you prioritize the events that require immediate corrective action.

Incident - An incident is a set of events that can cause a cluster to stop serving data to the client and run out of space for storing data. Events with an impact level of Incident are the most severe. Immediate corrective action should be taken to avoid service disruption.

Risk - A risk is a set of events that can potentially cause a cluster to stop serving data to the client and run out of space for storing data. Events with an impact level of Risk can cause service disruption. Corrective action might be required.

Event - An event is a state or status change of storage objects and their attributes. Events with an impact level of Event are informational and do not require corrective action.

Description of event impact areas

Events are categorized into five impact areas (availability, capacity, configuration, performance, and protection) to enable you to concentrate on the types of events for which you are responsible.

Availability - Availability events notify you if a storage object goes offline, if a protocol service goes down, if an issue with storage failover occurs, or if an issue with hardware occurs.

Capacity - Capacity events notify you if your aggregates, volumes, or LUNs are approaching or have reached a size threshold, or if the rate of growth is unusual for your environment.

Configuration - Configuration events inform you of the discovery, deletion, addition, removal, or renaming of your storage objects. Configuration events have an impact level of Event and a severity type of Information.

Performance - Performance events, also called incidents, notify you of resource, configuration, or activity conditions on your storage cluster that might adversely affect the speed of data storage input or retrieval on your monitored SVM and volumes. Description of performance impact events is provided in OnCommand Performance Manager help.

Protection - Protection events notify you of incidents or risks involving SnapMirror relationships, issues with destination capacity, problems with SnapVault relationships, or issues with protection jobs. Any Data ONTAP object (especially aggregates, volumes, and Storage Virtual Machines (SVMs)) that host secondary volumes and protection relationships are categorized in the protection impact area.

<u>Requirement</u>

8.2.2.6.2.2.1.12. Describe the capabilities for remotely monitoring the system.

<u>Response</u>

Simple and Efficient Storage Management with NetApp OnCommand

NetApp OnCommand data management software products give City of Columbus comprehensive control over its shared storage infrastructure. With the OnCommand portfolio, you have a choice of management solutions—from simple to advanced enterprise-ready capabilities—that enable IT to retain control of data on the premises and in the cloud. NetApp helps City of Columbus maximize system utilization, meet storage service-level agreements (SLAs), minimize risks, and boost overall performance.

The OnCommand portfolio includes products for managing NetApp and non NetApp storage and integrating third-party orchestrators and management tools.

The OnCommand Portfolio.

Product Name	Description
System Manager	Provides device-level management of NetApp storage systems. Ideal for one-off and nonrepeatable management and configuration tasks.
Unified Manager and Performance Manager	Monitors the availability, capacity, performance, and protection of NetApp FAS and All Flash FAS resources. Unified Manager provides a single view of NetApp storage health. An integrated component, Performance Manager collects, retains, and analyzes NetApp storage performance statistics so users can troubleshoot and resolve issues quickly.
Workflow Automation	Enables automation and delegation of repeatable storage management and storage service tasks. It facilitates City of Columbus's exact storage service and standardizes processes for best practices. It also integrates with orchestrators for end-to-end automated service delivery.
Cloud Manager	Deploys NetApp ONTAP® management software on AWS cloud storage in minutes. Manage and track cloud resources with ease. Cloud Manager is for ONTAP Cloud and private storage environments.
API Services	Provides a set of REST APIs to integrate and pull data from Unified Manager and Performance Manager into a third-party management console.
Insight	OnCommand Insight is an open data center management platform that provides operational intelligence, business insight, and IT ecosystem integration within

Product Name	Description
	complex enterprise IT environments.

The NetApp OnCommand management portfolio delivers management simplicity, agility, and flexibility to help City of Columbus:

- Achieve optimal storage and service efficiency
- Simplify NetApp storage management
- Get a complete view of NetApp storage health
- Save time and money with Workflow Automation
- Enhance efficiency with integrated management
- Manage storage in the cloud
- Centralize integrated monitoring of storage infrastructure
- Manage the data center

Achieve Optimal Storage and Service Efficiency

The optional products in the OnCommand portfolio are designed with the same intuitive look and feel. Common storage tasks and troubleshooting take minimal time and effort so resources can focus on more strategic projects. With the ability to automatically provision storage resources based on service levels and changing application requirements, you can achieve improved operational efficiencies and transform data centers to build a hybrid enterprise.

Centralized management with granular-level monitoring, alerting, troubleshooting, and reporting is available through OnCommand storage management products. Once areas for improvement are identified using OnCommand products, you can make adjustments to optimize storage efficiency to improve service delivery. With OnCommand products, City of Columbus can perform a broad range of administrative tasks, including:

- Set up, configure, and continue to administer using wizards and workflows
- Maintain optimal utilization and performance levels with intuitive dashboards and proactive monitoring and alerting
- Provision storage and automatically protect it
- Automate repeatable processes and integrate storage processes—from simple to complex
- Integrate storage management and processes using REST APIs
- Perform capacity planning
- Execute chargeback or showback

Service efficiency is achieved through automation and continual analysis. Policy-based automation further improves service delivery by reducing labor-intensive manual administrative tasks. This in turn helps organizations such as City of Columbus to:

- Reduce errors and potential downtime
- Increase IT organizational productivity
- Meet SLOs

Analytical capabilities allow City of Columbus to perform ongoing objective evaluations of its storage environment. Storage that is managed as an integral element of City of Columbus's IT infrastructure gains

greater service efficiency. Centralized automated management of storage on the premises and in the cloud makes storage operations simple, further increasing operational efficiencies.

Simplify NetApp Storage Management

NetApp OnCommand System Manager is device-level management software that is designed with an easy-to-use GUI and wizards to quickly and easily perform day-to-day tasks. Bundled with NetApp ONTAP, this versatile browser-based software gives City of Columbus's administrators the ability to configure and manage NetApp FAS and All Flash FAS storage and is suitable for NetApp novices and experts alike. You can:

- Manage individual or clustered storage systems through a browser-based interface
- Provision storage in minutes
- Perform common storage tasks faster with wizards
- Manage ONTAP software, including the latest features

Get a Complete View of NetApp Storage Health

OnCommand Unified Manager and integrated component OnCommand Performance Manager provide a comprehensive data management solution included as an entitlement with NetApp ONTAP operating system software:

- **OnCommand Unified Manager and Performance Manager.** Easily monitors and alerts on the storage health, availability, capacity, performance, and data protection status of your NetApp storage.
- **OnCommand Performance Manager.** Delivers comprehensive data storage performance monitoring, with notifications and alerts for proactive management. Performance Manager provides timely system analysis, including information for performance capacity planning.
- **Access to OnCommand Unified Manager and Performance Manager.** Take a deep dive into performance details with Single Sign On through a single dashboard.

Comprehensive Monitoring, Discovery, and Alerting

Together, these products provide a complete view of City of Columbus's NetApp storage health. The simplified GUI enhances the overall user experience with an integrated view of how your storage infrastructure is performing. Administrators monitor health and performance attributes from a single location—by logging in to a single URL just once—to access Unified Manager and Performance Manager. The Favorites dashboard is a personalized feature in which users add their most accessed views, which helps streamline access to essential storage data:

- Get proactive notifications about storage events and issues
- Quickly drill down to vital information with color-coded topology views
- Receive suggestions for corrective actions for fast remediation
- Use groups and annotations to filter notifications and report information
- Access standard reports or create custom operational reports

Favorites dashboard – Provides a view of your most vital information, the storage objects that you view most frequently.
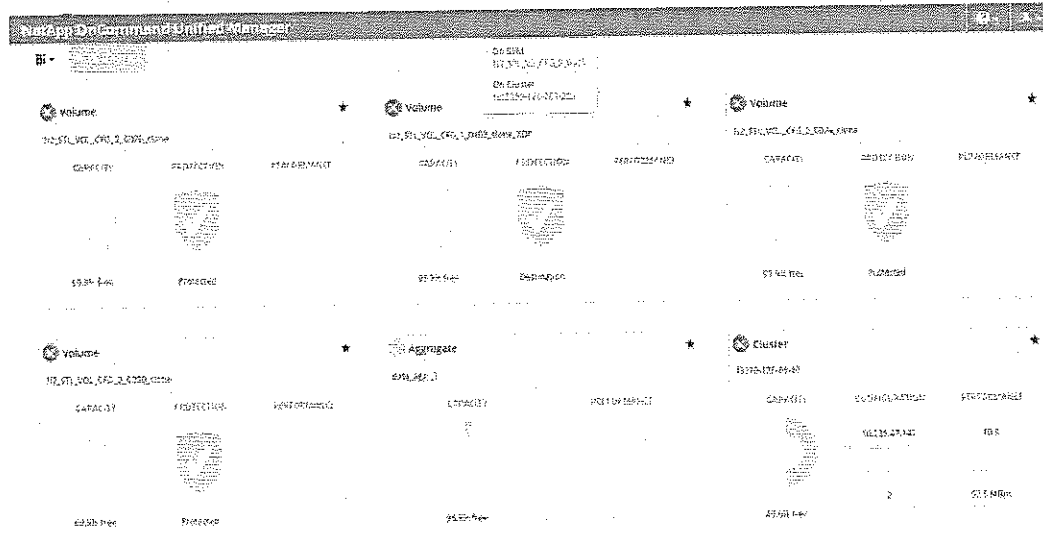
The dashboard and monitoring capabilities offered in OnCommand Unified Manager provide a quick and easy view into the health of any NetApp storage system, including details on availability capacity, performance, and data protection. Automated alerts, recommended corrective actions, and operational reports enable administrators to make changes to and adjust storage to maximize availability and utilization, boost performance, and increase overall storage efficiency.

OnCommand Unified Manager dashboard in detail
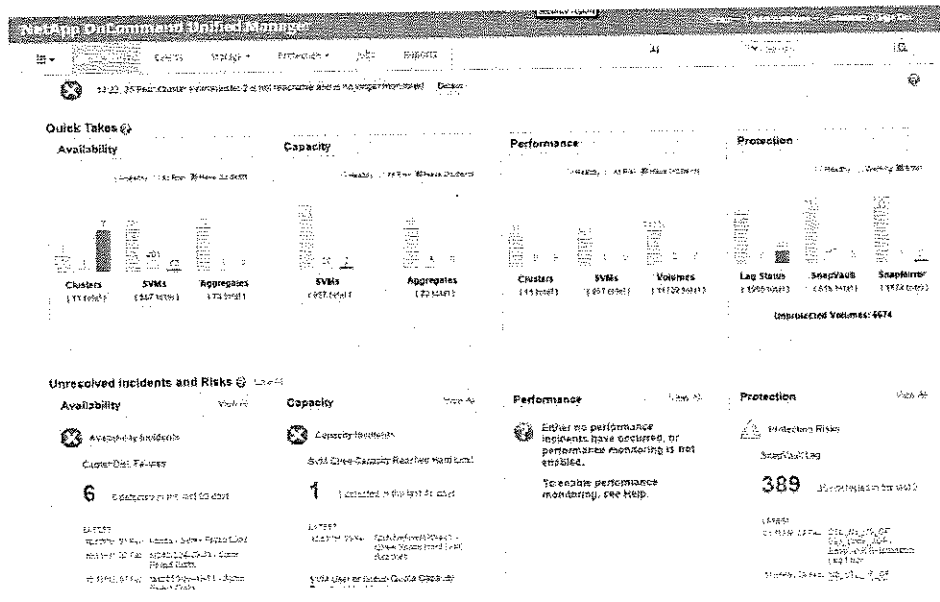
Simple, Powerful Management for NetApp ONTAP

OnCommand Unified Manager lets you discover, monitor, receive notifications, and set alerts on NetApp FAS and All Flash FAS storage. The management server provides the foundation for improved availability, scalability, supportability, performance, and security for your storage infrastructure. Unified

Manager will help City of Columbus gain efficiency through optimization of existing storage infrastructure without having to buy more storage.

Unified Manager runs as a VMware virtual appliance and can be installed on a VMware ESX, Red Hat Linux, or Microsoft Windows server. City of Columbus can use OnCommand Unified Manager for common storage workflows, including:

- Setting up the storage management environment after deployment
- Configuring, monitoring, and protecting SVMs with Infinite Volumes and data policies
- Diagnosing and managing availability, volume capacity, and performance issues
- Creating, monitoring, and diagnosing protection relationship issues related to NetApp SnapMirror®, SnapVault®, and MetroCluster™ technologies

Unified Manager reports on topics such as configuration, capacity utilization, operational status, storage efficiency, and inventory.

Integrated Performance

Managing performance can be a time-consuming manual task. OnCommand Performance Manager is an integrated component of Unified Manager that automatically monitors your systems and alerts you to potential performance issues. Performance Manager also helps you to troubleshoot and isolate potential problems, and it offers solutions to performance issues based on system analysis.

OnCommand Performance Manager is easily launched within the Unified Manager dashboard. It automatically monitors and analyzes the performance of NetApp FAS and NetApp All Flash FAS systems. The performance dashboard within Performance Manager sorts clusters by level of importance; simply click to drill down into cluster details. The intuitive user interface allows City of Columbus to explore performance trends and compare the performance of storage objects within clusters. You can view and compare multiple objects, identify areas of concern, and proactively manage and optimize storage performance. You can also:

- Get continuous, detailed analysis of FAS and All Flash FAS performance
- Compare performance workloads
- Optimize performance levels
- Get performance capacity planning

OnCommand Performance Manager Explorer view.

Save Time and Money with Workflow Automation

NetApp OnCommand Workflow Automation works with Unified Manager and other NetApp software products, such as our data protection software and OnCommand Insight, to automate common storage and data protection workflows. By reducing the risk of human error, unplanned downtime—often caused by manual processes—is minimized and productivity is maximized, enabling City of Columbus to better meet SLAs. Storage administrators can create storage workflows for the most frequent tasks and make them available to consumers for one-click automation. Storage architects can automate time-consuming, complex processes to meet cost-saving objectives, a common goal when moving data to the cloud.

Get Fast and Reliable Automation

When using Workflow Automation, each storage workflow is viewed as a series of steps from start to finish. Workflow Automation comes with more than 60 standard workflows to help you get started quickly. Software engineering skills are not required to use OnCommand Workflow Automation. Web-based training and the Storage Automation Store (automationstore.netapp.com) enable you to obtain new workflows as they become available.

City of Columbus's storage architects or administrators can define workflows based on policies and service-level objectives to align them with organizational and NetApp best practices. You also maintain control over development and maintenance of the automated workflows so that they are aligned with changing business requirements. You can:

- Provision, migrate, or decommission storage for databases or file systems
- Automate data protection processes to a disaster recovery location on the premises or in the cloud
- Set up storage for an application as part of an end-to-end orchestration process
- Clone and set up new dev/test environments, then remove them when no longer needed.
- Set up the FlexPod Datacenter platform or virtual desktops or conduct a centralized NetApp SnapManager software activation

Remove the Guesswork

If you need to create a custom workflow to meet specific business requirements, we make it easy. To create a custom workflow, start with the designer interface to construct or modify your workflow. Workflow Automation provides a library of predefined building blocks, as shown in the following figure. Additionally, you can add another building block to the library or collaborate with NetApp to add a new building block. Then select from the list of commands to build the workflow steps, identify your execution options, and define your resource selection options. Workflows can be built for a virtualized environment or a private, hybrid, or public cloud. The many options give you flexibility for building workflows to modernize the way you manage your environment.

Automating storage and data protection processes.

With policy-based workflow automation in place, City of Columbus's storage administrators provide authorized self-service capabilities through the OnCommand Workflow Automation portal. Doing so expedites service delivery for the most common storage task requests to further improve operational efficiency and opex savings.

Enhance Efficiency with Integrated Management

OnCommand Workflow Automation integrates with OnCommand Unified Manager to collect data about your storage environment. This integration gives you the ability to leverage information in other OnCommand Unified Manager deployments to automate storage and data protection processes. Processes across multivendor storage environments can also be automated. Simply download the OnCommand Insight Connector from the Storage Automation Store to integrate OnCommand Insight as a data source for Workflow Automation.

In addition, Workflow Automation connects to internal systems to collect information to determine resource selection, to open tickets, and more. With these capabilities you can deliver storage services faster and accelerate time to market. For example, Workflow Automation integrates with VMware vRealize Operations, VMware vRealize Automation, and vCloud Automation Center to deliver custom IT as a service with a single click. To invoke your workflows from an external portal or from the data center orchestration software, use the REST APIs that Workflow Automation provides. Since OnCommand Workflow Automation is a flexible framework, the same approach is taken to integrate and automate with other orchestrators such as Cisco UCS Director or Microsoft System Center Orchestrator.

Manage Storage in the Cloud

NetApp OnCommand Cloud Manager is provided as an entitlement for managing your hybrid cloud storage environment, including the NetApp ONTAP Cloud storage service, NetApp Private Storage (NPS) for Cloud, and NetApp ONTAP Cloud for Amazon Web Services (AWS). Cloud Manager brings your data fabric together through a single management interface that is independent of data location. Cloud Manager eases the day-to-day requirements of configuring, provisioning, and monitoring each active virtual and hardware storage node. With visibility into the actual resources consumed by each instance, Cloud Manager monitors and tracks cloud resource utilization, which you can later use in assessing your environment:

- Leverage a central point of control for all ONTAP Cloud instances
- Monitor the cost of ONTAP Cloud AWS cloud resources

- Automate data movement between your premises and AWS
- Automate recommendations for buying new storage
- Benefit from data security choice through NetApp managed encryption
- Attain ONTAP Cloud resource cost monitoring and monitor your entire hybrid storage environment (when combined with OnCommand Insight)
- Ease license, entitlement, and upgrade management

Centralize Integrated Monitoring of Storage Infrastructure

The traditional approach to managing application servers, networking, and storage infrastructure—typically with different vendor-provided tools—creates increased difficulty when managing complex infrastructures. NetApp OnCommand API Services helps IT organizations address complex IT management challenges through a streamlined approach that uses representational state transfer (REST) APIs to give City of Columbus the ability to integrate with third-party infrastructure-monitoring tools. Included with NetApp ONTAP software, it collects data from OnCommand Unified Manager and OnCommand Performance Manager to provide active monitoring and reporting of your ONTAP environment. IT organizations gain a view of the entire infrastructure with a single tool and can continue using their vendor-provided tools as needed to troubleshoot issues with specific infrastructure components. Use OnCommand API Services to:

- Integrate storage monitoring and reporting into one management interface
- View inventory objects, configuration, and events collectively
- Pull essential operational and performance metrics to take action

OnCommand API Services gives City of Columbus the ability to pull performance metrics from OnCommand Performance Manager and retrieve operational metrics such as capacity and utilization from OnCommand Unified Manager. Using these three products together, you can gather information about configuration, inventory, and provisioning for a holistic view of your NetApp storage. REST APIs allow you to integrate this information within the management console of choice. Since REST is a simple communication architecture that is commonly used in web-based and network-based services, NetApp uses REST APIs to provide flexibility and choice for integrating with third-party or custom management applications. If you prefer to use your own management application for managing your data center, OnCommand API Services lets you integrate and pull NetApp storage information quickly and safely.

Optimize Multivendor Storage Environments

Optional OnCommand Insight is an agentless tool that uses native APIs or interfaces with vendor-specific software to gather information—from end to end—about City of Columbus's environment. It supports multivendor and multiprotocol (FC, NAS, iSCSI, FCoE) storage environments.

This open architecture simplifies the dynamic mapping, visualizing, and monitoring of complex virtualized environments. It provides full visibility into the storage environment, including host-to-storage access paths, storage availability, and change management. The multivendor, multiprotocol, multiplatform support gives City of Columbus the ability to build accurate service paths to identify risk and provide compliance auditing. It also provides the information to proactively manage storage services to increase service quality, prevent application failures, and improve recovery time. City of Columbus can reduce costs by improving utilization and decreasing the time and effort required for troubleshooting.

With OnCommand Insight, City of Columbus can define global, application-based, or host-based policies on parameters such as security, sharing, minimum sessions, and minimum connections and validate changes against the resulting service model. You can monitor and manage Fibre Channel assets with performance and error counters for switches, ports, and fabrics. In addition, you can manage redundancy, check mapping, masking, and zones.

OnCommand Insight provides operations, service quality, and cost management across NetApp platforms as well as other major storage vendors, including Dell, EMC, Fujitsu, HDS, HP, IBM, Pure, and others. OnCommand Insight also monitors server virtualization and Fibre Channel switches from Brocade, Cisco, and QLogic.

OnCommand Insight interoperability support matrix.

OnCommand Insight Interoperability Support Matrix		
Storage Support		
NetApp	EMC	Hitachi (HDS)
• FAS Series 7-Mode/ONTAP	• Atmos	• HDS 95x/99x
• ONTAP Select	• Celera NAS	• SA800
• NetApp Private Storage (NPS)	• Clarion	• HM700
• ONTAP Cloud	• Centera	• HUS1xx, HUS VM
• E-Series	• Data Domain	• HNAS
• SnapVault (7-Mode)	• Isilon	• NSC
• SolidFire®	• Symmetrix	• USP/USPv
	• VNX/VNX2/VNXe/VG8	• SMS
	• VMAX/VMAX2/VMAX3	• VSP
	• XtremIO	• G400, G600, G800, G1000
		• WMS
Dell	Fujitsu	Pure
• Compellent	• Eternus	• FlashArray
HP	IBM	Infinidat
• 3PAR	• DS, DS6000/DS8000	• InfiniBox
• EVA	• Flash System v9000/900	
• HP-XP	• TotalStorage DS4000	
	• N-series	
	• XIV	
Amazon	Huawei	Violin
• S3	• OceanStor	• 6000 Series
Storage Virtualization		
• V-Series and NetApp FlexArray®		
• VMAX/Celerra NAS/VPLEX		
• SVC/v7000		
• VSP G1000/USPv		
• XP P9500		
Server Virtualization		
• VMware		
• IBM PowerVM		
• Microsoft Hyper-V		

OnCommand Insight Interoperability Support Matrix		
Storage Support		
NetApp	EMC	Hitachi (HDS)
• FAS Series 7-Mode/ONTAP	• Atmos	• HDS 95x/99x
• ONTAP Select	• Celera NAS	• SA800
• NetApp Private Storage (NPS)	• Ciarion	• HM700
• ONTAP Cloud	• Centera	• HUS1xx, HUS VM
• E-Series	• Data Domain	• HNAS
• SnapVault (7-Mode)	• Isilon	• NSC
• SolidFire®	• Symmetrix	• USP/USPv
	• VNX/VNX2/VNXe/VG8	• SMS
	• VMAX/VMAX2/VMAX3	• VSP
	• XtremIO	• G400, G600, G800, G1000
		• WMS

- Red Hat Enterprise Virtualization
- OpenStack KVM

Fibre Channel Switches/Access Gateways

- Brocade
- Cisco
- QLogic

Requirement

8.2.2.6.2.2.1.13. Describe the capabilities for automatically reporting fault conditions, both to organizational and supplier personnel.

Response

Please see 8.2.2.6.2.2.1.12 for this information.

Requirement

8.2.2.6.2.2.1.14. Indicate where the local and regional parts depots are located.

Response

Parts Depots in Ohio include Brecksville, Worthington, and Dayton. Additional locations close to Columbus include Cranberry Township, PA; Indianapolis, IN, and Fort Wayne, IN.

Requirement

8.2.2.6.2.2.1.15. Provide an inventory of all spare parts, including pricing that will need to be maintained in on-site inventory.

Response

No on-site parts are required for maintenance. In the event of a part failure a part is dispatched with engineer from a local depot in 4 hours.

Requirement

8.2.2.6.2.2.1.16. Describe the process for migration during end of installed life and any safe data erasure capabilities.

Response

ONTAP: NetApp's included at no additional cost DataMotion is like vMotion in VMware. This coupled with Clustered Data OnTap allows new and old NetApp controllers to be clustered together allowing use of the

VolMove tool to seamlessly move volumes from the old controller to the new one live while it is in production. Once data is evacuated from the old system it can be turned off and retired.

SANtricity: Migration of data is handled at the application layer

NetApp provides secure erase utilities for both OnTap based and Santricity based storage systems

Requirement

Training
8.2.2.6.3.1. The successful Offeror will be required to provide vendor training to users and system management communities. The Offeror shall also provide pricing for alternative modes of training delivery, if available.

Response

NetApp includes free online training basic for customers. Pricing has also been provided for optional instructor led training for one person for one week. This can be scaled to meet the number of individuals and depth of training desired by the City. Please see our pricing document for this information.

8.2.2.7. IMPLEMENTATION AND PROFESSIONAL SERVICES

Requirement

8.2.2.7.1. Offeror shall describe how it will manage the transition from current state to target state, including migration/implementation plans and handoff, clearly identifying who will provide the necessary resources and who will pay for them.
8.2.2.7.2. Offeror shall include in their statement of work (SOW)
8.2.2.7.2.1. Provide an implementation plan
8.2.2.7.2.2. Description of the specific services to be delivered
8.2.2.7.2.3. Milestones for a successful implementation
8.2.2.7.2.4. Project plan for migrating files from existing to new environment, including work breakdown structure and a test/dev plan to ensure successful file transfer.

Response

CDW•G follows a specific methodology for all of our customer engagements of Planning/Design, Testing, Migration/Cutover, Post-Sales Support. CDWG will provide a specific migration/implementation plan once the final solution has been identified. Upon award, we will identify the final solution with City of Columbus and outline the implementation plan, description of specific services and milestones for a successful implementation. The Migration Workshop identified in the pricing worksheet will provide the best guidance for the City of Columbus to perform migrations.

Please note: Before the Services are to be performed, CDW•G will create a Statement of Work (SOW) detailing the exact scoping and pricing of the Services to be provided, which will be executed by both parties prior to the start of Services. The SOW will be governed by the terms and conditions negotiated between the parties during the bidding and contracting process.

Response

8.2.2.8. OFFEROR'S QUALIFICATIONS

8.2.2.8.1. Company History

Requirement

8.2.2.8.1.1. A brief description of its company.

Response

⊕ Founded in 1984, CDW is a leading provider of multi-brand technology solutions in North America and the United Kingdom. CDW employed approximately 8,600 coworkers and generated sales of over $12.9 billion in 2015. CDW•G was founded in 1998, nearly 19 years ago, to focus solely on the needs of our education, government, and healthcare customers. As a leading provider of IT products, services, and integrated systems, CDW•G is an expert consulting, design, configuration, installation, and additional lifecycle management services provider. Our over 30 years of experience in the IT industry makes us uniquely qualified to support the needs of the City.

CDW Quick Facts
⊕ Headquarters: **Vernon Hills, IL**
⊕ Date Established: **1984**
⊕ 2015 Annual Net Sales: **$12.9 Billion**
⊕ # of Coworkers: **8,600**
⊕ # of Locations: **26**
⊕ # of Customers: **250,000+**
⊕ Fortune 500 Rank: **220**

Requirement

8.2.2.8.1.2. A description of its experience in providing storage solutions.

Response

With experience implementing thousands of storage solutions across the nation, our dedicated team of over fifty storage solution architects help the City construct a unified storage environment. Our data center capabilities include converged infrastructure, backup, virtualization, power and cooling, and storage. Our engineers have the knowledge to support the City's storage needs. From orchestration to fabric technologies, our pre-sales engineers can advise the City on the best storage solution to meet your needs.

Our customers have been purchasing our storage products and services for over 20 years, which has turned us into a leader in deploying server and storage virtualization and optimization solutions. We have extensive experience integrating solutions into just about any network environment, and we have strong relationships with leading industry vendors, such as NetApp.

Requirement

8.2.2.8.1.3. Evidence of financial stability with an annual report, Form 10-K or audited financial statement.

Response

The City of Columbus should take note that CDW•G is financially stable. We will be here to support you in every way possible throughout the life of this contract and beyond. We believe the major factor that ensures our financial stability and separates us from our competitors is the balanced approach to our business.

- **We don't rely on any one customer.** In our U.S. business, which represents over 90% of our revenues, we currently have five dedicated customer channels: medium/large business, small business, government, education and healthcare, each of which generated over $1 billion or more in net sales in 2016.
- **We don't rely on any one partner.** In 2016, we generated over $1 billion of revenue from each of four of our vendor partners and over $100 million of revenue from each of 13 other vendor partners.
- **We don't rely on any one solution.** Our sales span a number of categories including Miscellaneous Hardware (28.5%), Software (17.2%), Notebooks/Mobile Devices (21%), Netcomm Products (14.%), Services (4.1%), and others.

For the year ended December 31, 2016, we estimate that our total Net sales of $14 billion represented approximately 5% of our addressable markets. We believe that demand for IT will continue to outpace general economic growth in the markets we serve fueled by new technologies, including cloud, virtualization and mobility as well as growing end-user demand for security, efficiency and productivity. Our most recent financial statements can be found on our website at: http://investor.cdw.com/sec.cfm.

Requirement

8.2.2.8.1.4. Name of the manufacturer of the proposed system.

Response

In business since 1992, NetApp is the manufacturer of the proposed system. NetApp is a financially stable fortune 500 Data Storage Solutions provider and is the largest publicly traded data storage product and services manufacturer in the world.

Requirement

8.2.2.8.1.5. Name/location of a technical support center that provides remote maintenance.

Response

Worldwide NetApp provides 350 parts depots, 7 Technical Support Center (TSC) locations: Amsterdam, Netherlands; Dalian, China; Newcastle, U.K; Lake Mary, Florida, US; Raleigh, North Carolina, US; Wichita, US; Sunnyvale, California, US. Six escalation centers: Amsterdam, Netherlands; Bangalore, India; Tokyo, Japan; Raleigh, North Carolina; Wichita, Kansas; Sunnyvale, California. 120 dispatchers with local language capability and security and 3 test and repair centers. **The main support center for the United States is in Raleigh North Carolina.** Local Parts Depots in Ohio include Brecksville, Worthington, and Dayton. Additional locations close to Columbus include Cranberry Township, PA; Indianapolis, IN, and Fort Wayne, IN.

Requirement

8.2.2.8.1.6. A list of other types of customer support available from the technical support center.

Response

NetApp customer support offerings are too numerous and lengthy to include within the limitations of this response. Details on NetApp support options are available on the following links.

http://www.netapp.com/us/services-support/services/support-services.aspx

http://www.netapp.com/us/media/ds-2700.pdf

Requirement

8.2.2.8.1.7. At least three reference customers with similar requirements to the solution being proposed. Customer reference information must include company name and location, contact person, telephone number, email and the system name with model number.
8.2.2.8.1.8. Customer references should include at least one from (1) the same market vertical of The City of Columbus (2) the same geographic region of the City of Columbus and (3) a recent deployment (during the past 12 months).

Response

References are included in the charts below.

Columbus Regional Airport Authority	
Location	4600 International Gateway Columbus, OH 43219

Columbus Regional Airport Authority	
Contact Person	Michael Journigan, Technology Services Manager
Phone Number	614.239.5048
Email	mjournigan@columbusairports.com
System Name with Model Number	Name - E-Series Model - E-5400

Ohio Supercomputer Center	
Location	1224 Kinnear Road Columbus, OH 43212-1163
Contact Person	Doug Johnson, Senior Systems Engineer
Phone Number	614.292.6286
Email	djohnson@osc.edu
System Name with Model Number	4 x NetApp FAS Controllers Model FAS8040 with FlexArray 4 x NetApp E-Series controllers Model E5600

City of Rochester, NY	
Location	30 Church St., Rochester, NY 14614
Contact Person	Ryan Strecker, Systems Engineer
Phone Number	585.428.9874
Email	Ryan.Strecker@cityofrochester.gov
System Name with Model Number	FAS8040/AFF8020 - Production cDOT cluster hosting mainly VMware Datastores (NFS & VMFS, CIFS) - 87TB E5660 for BWC (FC) 1.5PB E5660 for Veeam Backup Target (FC) - 500TB E2700 for Video Surveillance (FC) - 100TB FAS2554 for DR/Test/Dev at Co-lo – 300TB

Central Ohio Transit Authority	
Location	William J. Lhota Building 33 N. High St. Columbus, OH 43215
Contact Person	Aaron R Hibbard, Senior Systems Engineer
Phone Number	614.275.5850
Email	hibbardar@cota.com
System Name with Model Number	4x NetApp FAS Model FAS3220

Requirement

8.2.2.8.1.9. The quantity and location of qualified personnel available to support the proposed solution.

Response

CDW•G Support

CDW•G is able to support this solution both from a local and national perspective. CDW•G has two branches in Ohio, located in Cleveland and Cincinnati, with many of our presales, delivery, and post-sales support personnel living in the Columbus area. Between those two branches, we employ over 140 coworkers to support our Ohio customers. CDW•G has over ten NetApp engineers as a part of our

delivery practice. In all, our engineers have over 40 industry certifications and follow our proven methodology to deliver optimal NetApp solutions.

NetApp Support

NetApp will provide support for this solution. The following numbers of Field Service Technicians are on staff within the region to be deployed for field service repair orders.

NetApp Field Service Technicians		
Ohio	**Indiana**	**Pennsylvania**
Worthginton (Columbus)- 8	Indianapolis – 4	Pittsburgh - 5
Brecksville - 8	Fort Wayne – 3	
Dayton – 10		

Requirement

8.2.2.8.1.1 0. Provide a description for each labor classification to include minimum education and/or certifications, average years of experience, typical promotion track and typical responsibilities during a project. The DoT is especially interested in being able to differentiate between classifications with similar titles such as a Senior Project Manager and a Project Manager.

Response

CDW•G employs several different categories of engineers based on our various technologies that we are able to support including Cisco, Microsoft, IBM, and NetApp. Upon request, we will outline the specific classifications for the specific technologies that best represent the final solution.

Experience for NetApp engineers is provided in response to question 8.2.2.6.2.2.1.4.

Requirement

8.2.2.8.1.11. Provide the maximum (cap) hourly rate for all labor categories for the following calendar years: 2017, 2018, and 2019. Actual tasks will either be fixed-fee based or direct-labor based on the actual labor rates of personnel performing work. In addition to the hourly rates, provide the Hourly Cost Multiplier (HCM) in percentage format that is to be used for the duration of the contract

Response

Please see the cost proposal for this information.

8.2.2.8.2. Responsibility for Proposed System Implementation

Requirement

8.2.2.8.3. The Offeror shall include a statement describing the terms of the agreement with the manufacturer(s) of the proposed solutions. The statement must define the distributor's authorized territory; note the current contract expiration date; and include a statement from the manufacturer agreeing to support the product, the distributor and the buyer for a minimum of seven years.

Response

CDW•G has provided a Letter of Understanding from NetApp in the appendix of our proposal.

Requirement

8.2.2.8.4. If the RFP is from more than one party, such as a combined proposal from a manufacturer and a distributor or system integrator, then the accountabilities of each party must be spelled out clearly. The prime contractor and the account management structure proposed must be acceptable to the City of Columbus.

Response

The unique partnership between CDW•G and NetApp allows us to working closely and provide a highly integrated solution to the City of Columbus. This allows both companies to provide several layers of

support. The City of Columbus is supported from a sales perspective by both CDW•G and NetApp with local Account Executives and Architects who will work together to coordinate this support. Below is a breakdown of each party.

Responsibility Breakdown	
CDW•G	**NetApp**
PreSales Architecture, Fulfillment of Hardware, Implementation of Hardware - Primary, Migration Resources – Primary, Project Management	PreSales Architecture, Implementation of Hardware-Secondary, Migration Resources – Secondary, Training, Break/Fix - 24x7 Support

8.2.2.8.5. Offeror's Support and Structure

Requirement

8.2.2.8.6. If the proposed system will function within a multisite, networked environment, then the bidder must explain its capability to provide regional and national support for multiple locations.

Response

The proposed system will function in a multisite, networked environment, and both CDW•G and NetApp have options for regional and national resources to leverage as needed. CDW•G has over 30 national locations from which we can provide support, and we have a partner network available where necessary.

Requirement

8.2.2.8.7. The Offeror shall describe the structure of its organization, with organization charts showing the executive, engineering, sales and field support (installation, service and training) entities within the company.

Response

Please see the below organization charts for the structure of our teams.
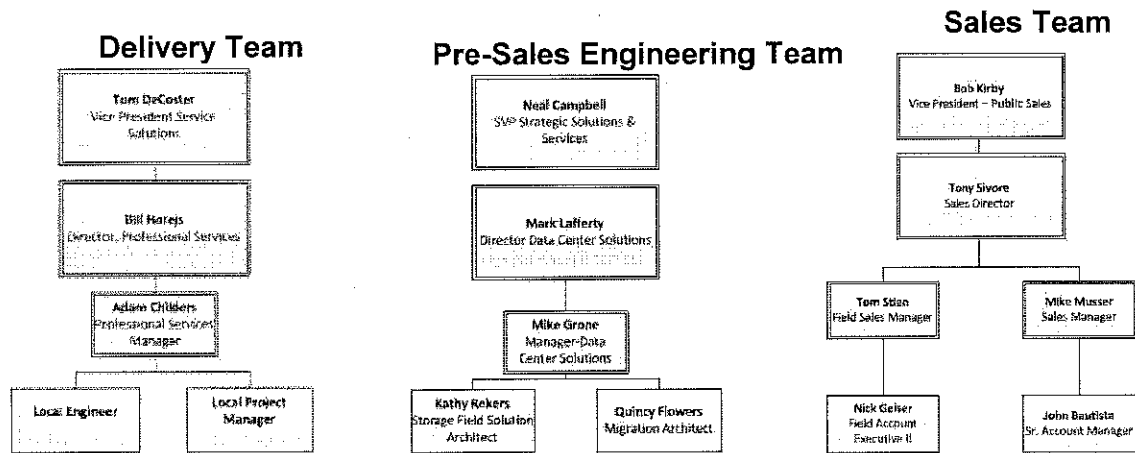
Requirement

8.2.2.8.8. The Offeror shall state how many people it employs in each of the following job categories and whether they are employees or contractors:
8.2.2.8.8.1 Project management
8.2.2.8.8.2. Engineering support
8.2.2.8.8.3. Customer service
8.2.2.8.8.4. Device installation (could be hardware or virtual appliance)

8.2.2.8.8.5. Training

Response

CDW•G does not breakdown our workforce according to the classifications provided. However, below are numbers based on our classifications. Roughly 5% of our workforce is made up of contractors.

CDW•G Resources		
Field Services	**Managed Services**	**Associate Engineering**
446	188	48

8.2.2.8.9. Offeror shall:

Requirement

8.2.2.8.9.1. Provide a copy of its most recent annual report, or at least a financial status statement including annual revenue, profit, net worth and other data.

Response

Our most recent financial statements can be found on our website at:http://investor.cdw.com/sec.cfm.

Requirement

8.2.2.8.9.2. Have a technical support center that provides remote maintenance.
8.2.2.8.9.3. Explain what other types of customer support are available from the technical support center.
8.2.2.8.9.4. Describe its standards and processes for providing emergency service

Response

CDW•G provides technical support on most hardware and operating systems for up to two (2) years after purchase.

CDW•G's technical support technicians handle both incoming and outgoing follow-up calls. Technical support technicians are located in Eatontown, NJ. Most of our technical support technicians are CompTIA certified and hold, at a minimum, A+ and Network+ certifications or at least two years' help desk experience and one year customer service experience. Many of our technicians have invested their careers in CDW•G, and rigorously pursue ongoing training to bring you the most updated technical knowledge. Many technicians are also accredited in various engineering and manufacturing training courses. We pride ourselves on our ability to consult with customers on a full range of cases, from simple to complex, from general to industry-specific.

The City can contact CDW•G's technical support department via phone, email or online chat.

8.2.2.9. SYSTEM PRICING AND LICENSING

Requirement

8.2.2.9. 1. Offeror shall describe the pricing structure of the proposed solution and provide a bill of materials (BOM) that includes full and complete line item pricing for both the low and high estimates showing Phase A and Phase B along with the total for both phases separately utilizing the provided Excel Storage RFP Submittal Workbook (Appendix B). See the attached for additional information. Each FRU or stock-keeping unit (SKU) will include the following column headings or fields even if the item is sold as part of a bundle:
8.2.2.9.2. Manufacturer's Part number
8.2.2.9.3. Part description
8.2.2.9.4. List price
8.2.2.9.5. Discount percentage
8.2.2.9.6. Discount off of list price
8.2.2.9.7. Net or bid unit price
8.2.2.9.8. Quantity

8.2.2.9.9. Extended list price
8.2.2.9.1 0. Extended net price
8.2.2.9.11. Hardware
8.2.2.9.12. Software
8.2.2.9.13. Licensing
8.2.2.9.14. Maintenance
8.2.2.9.15. Training
8.2.2.9.16. Special one-time discounts, such as trade-in allowances, maintenance costs waivers, entered as a product line item as a negative cost or credit.
8.2.2.9.17. Professional services (includes design of the system)
8.2.2.9.18. Implementation services
8.2.2.9.19. Project management costs (including transfer of files from current to new system).
8.2.2.9.20. Documentation
8.2.2.9.21. Optional capabilities

Response

Please see our cost proposal for pricing information.

8.2.2.10. System and Licensing Upgrade Costs

Requirement

8.2.2.11. The Offeror will specify the minimum discounts off list prices to be applied to all future hardware and software upgrades and any premiums that are applied to hardware and software upgrades relative to the cost of the same component or software title being purchased as part of the initial system.
8.2.2.12. The Offeror shall offer methods of payment and all relevant payment terms.
The BOM should be provided in editable (i.e., unprotected Excel) electronic format full and complete line-item pricing should be provided for any item that has its own FRU or SKU number, even if the item is sold as part of a bundle.

Response

Please see our cost proposal for pricing information.

8.2.2.13. Optional Purchase Proposal

Requirement

8.2.2.14. The City has an interest in capacity-on-demand, storage-on-demand storage-as-a-service or similar pricing in an operating cost rather than capital expenditure model. In this model, the vendor may submit an optional proposal for the storage requirements for the low cost estimate Phase A & B over a fixed term of no less than 12 months and no more than 72 months and in 12 month increments. For example, a 36 or 60 month term. With this approach, the vendor typically monitors consumption remotely and ships additional storage to the customer on an "as-needed" basis at a specified cost per additional GB or TB.
8.2.2.15. For example: Phase A Low would provide 1,181 TB in Year 1 (2017) at a cost of $X.OO per month for 12 months. Additional storage would cost $X.OO per month per GB.
8.2.2.16. Should the Offeror propose an optional operating cost model, it must include all equivalent costs for hardware, software, licensing, maintenance, upgrades, professional services, and technical model that is comparable to the capital model described above.

Response

Both NetApp and CDW have numerous on demand CAPX and OPEX payment options. As such, they are available, but are too numerous and extensive to list within the confines of this response. We would be delighted to discuss these options with you with a more thorough understanding of your requirements for this cost model.

8.2.2.17. PROPOSAL EVALUATION CRITERIA

Requirement

8.2.2.17.1. Proposal responses shall be reviewed, judged, scored, and ranked by an evaluation committee consisting of managers in the Department of Technology and the Department of Public Safety. Evaluation will be a multistep process consisting first of a compete proposal submission by the vendor prior to the RFP deadline, a review of the proposals by the City's evaluation committee, and then three (3) or more of the highest rated/ranked vendors may be selected with which to hold additional discussions and to present their proposed solutions.

8.2.2.17.2. Quality and Feasibility (Sections 5, 6, 7)

8.2.2.17.2.1. Proposals must include a description of proposed services and deliverables consistent with the scope outline in Sections 5, 6, and 7. Proposals must also include work samples that satisfy the requirements of the sections listed above.

8.2.2.17.3. Ability (Section 8.2.2.8)

8.2.2.17.3.1. Vendor must demonstrate the ability to complete the services as planned and on schedule to include the following:

8.2.2.17.3.1.1. Capacity Scalability

8.2.2. 17.3.1.2. Efficiency

8.2.2.17.3.1.3. Interoperability and Ecosystem Manageability

8.2.2. 17.3.1.4. Availability

8.2.2.17.4. Vendor's Competence (Section 8.2.2.8)

8.2.2.174.1. Vendor shall demonstrate through background and qualifications that they are capable of providing the services described in this RFP. Particular focus will be paid to the work experience of personnel to be assigned by the vendor to this project, in performing similar projects.

8.2.2.17.5. Past Performance (Section 8.2.2.78)

8.2.2.17.5. 1. Vendors must provide at least 3 reference contact information as described in Section 8.2.2.8. The reference contact shall include the name, email address, street address, telephone number, fax number, and a description of the contract amount and service that was provided.

8.2.2.17.6. Cost and Payment Term (Section 8.2.2.9)

8.2.2.17.6. 1. Proposals must identify proposed costs as outlined in Section 8.2.2.9.

Response

CDW•G has provided all requested information in our cost proposal.

PROPOSAL

To the Finance & Management Director of the City of Columbus, Ohio:

We (I) propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

Delivery: _____30_____ - calendar day(s) after receipt of order.

Terms:

Net 30

Company Name or Bidder's Name:

CDW Government LLC

Business Address of Bidder:

230 N. Milwaukee Avenue, Vernon Hills, IL 60061

REQUIRED Company Employee Information:
    Total number of company employees = 8,500
    Total number of company employees working in Columbus = 129 (Ohio)
    Additional number of employees that will be working in Columbus in the event this contract is awarded to your company = Not known at this time

The full name and residence of all persons and parties interested in the foregoing bid are: (If a corporation, give the name and address of the president and secretary; if firm or partnership, the names and address of the Members or partners.)

Name	Address
Thomas E. Richards, CEO	230 N. Milwaukee Avenue, Vernon Hills, IL 60061 (Office)
Christina V. Rother, President	230 N. Milwaukee Avenue, Vernon Hills, IL 60061 (Office)

Authorized Signature X ⎯⎯Brian Fisher   **Title:** Manager - Program Management
        (SIGNATURE MUST IN WRITING IN OTHER THAN BLACK INK)   (TITLE MUST BE GIVEN)

REVISED 10-5-05

Cost Proposal Option 1

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

mpany Name CDW Government LLC
ontact Name Nick Geiser
hone Number 614.318.9058
-mail Address nickgei@cdwg.com

Please complete the required pricing for the Phase A and B low and high pricing estimates
Each tab includes a main area for the baseline configuration and additional space for incremental storage
Each tab also includes an area for professional services for installation, configuration and training
Sample data provided herein is for illustrative purposes only and should be replaced with actual data
Additional rows may be added by the bidder; HOWEVER, please change the formula for the table totals or sum columns j and k and insert in the table totals above

As mentioned in our narrative, we have put together two possible NetApp hardware solutions.
Accordingly, you will find two fully detailed pricing worksheets to show the cost differences.
There is a large amount of information as a part of the pricing worksheets so we wanted to highlight some important notes regarding our worksheets.
We tried as best as possible to follow the format but are happy to answer any questions you may have.
1. Our Tier 1 solution immediately exceeds your Phase A and B expectations, which will result in less complexity and is more cost efficient over time. As such, there is no need to add more controllers or capacity over time and we left Phase B blank to show that.

2. In some cases, like the Tier 3 storage addition in Phase B Low estimation our offering provide more than enough because it's the most efficient and cost effective.

3. We built all solutions to come with five years of support up front. Again, this is the most cost effective way to procure NetApp support.

4. In case you would like to see the option of procuring 1yr or 3yr support up front and subsequently the annual costs to support the hardware, we have added a fifth Tab called "Support Options".

5. All Professional Services estimates are based solely on our hardware builds and do not take into account any current environmental or resource considerations from City of Columbus.

6. We require a final design discussion and review with the City of Columbus after which we can provide a formal Statement of Work describing the formal scope, deliverables and terms/conditions.

7. CDW is proposing a Migration Workshop were we can develop a migration plan for the City of Columbus based on best practices. Most customers prefer to use their own resources to actually migrate their data on their own schedules.

8. We can offer our migration resources if you would like to leverage our team. CDW can provide a Migration worksheet to properly scope those additional resources.

9. We are proposing that the City of Columbus utilize NetApp training courses to get formal best practices along with any over the shoulder training from the CDW implementation. We have included credits for (3) 5 Day courses in each Phase A.

Bidder's Summary For Phase A and B Estimates - Option #1

Phase A Low

	Useable Storage in TB's	Total Extended List Price		Total Extended Net Price	
Tier 1 Storage	65TB*	$	746,574.97	$	200,970.57
Tier 3 Storage	1,295.00TB	$	1,202,747.29	$	379,430.16
Phase A Professional Services****		$	68,940.00	$	62,046.00

Phase B Low

	Useable Storage in TB's	Total Extended List Price		Total Extended Net Price	
Tier 1 Storage	**	$	-	$	-
Tier 3 Storage	1,295.00TB***	$	1,202,747.29	$	379,430.16
Phase B Professional Services		$	38,500.00	$	34,650.00

Phase A High

	Useable Storage in TB's	Total Extended List Price		Total Extended Net Price	
Tier 1 Storage	65TB*	$	746,574.97	$	200,970.57
Tier 3 Storage	3800TB	$	3,608,241.87	$	1,138,290.48
Phase A Professional Services****		$	74,260.00	$	66,834.00

Phase B High

	Useable Storage in TB's	Total Extended List Price		Total Extended Net Price	
Tier 1 Storage	**	$	-	$	-
Tier 3 Storage	3700TB	$	3,608,241.87	$	1,138,290.48
Phase B Professional Services		$	46,760.00	$	42,084.00

Ranges:

	LOW		HIGH	
PHASE A	$	642,446.73	$	1,406,095.05
PHASE B	$	414,080.16	$	1,180,374.48

Reference:

* Initial outlay of 65TB is exceeds your Phase A and B requests, however we believe this results in least complexity and lowest cost over time

** Since the initial outlay of 65TB exceeds your total requests, we wanted to show that there is no need to add controllers and capacity in Phase B

*** This does exceed Phase B Low estimate, however this is still the most simplistic and cost effective avenue to add controllers and capacity (smaller increments are available)

**** Phase A Services included both a Migration Workshop and Training for 3 People for 1 Week Each. The Migration will plan out the Migration using best practices however City of Columbus will handle both migrations. This is normal for most customers but if you would like CDW/G to handle the migrations then we would need to more information to properly scope.

Phase A Low Estimate
For Calendar Year 2017

Table 1 Baseline configuration for Tier 1 Low Estimate
Use the worksheet below to described required hardware, software and licensing components for Phase A and useable storage of: 65TB* TB

Table 1 Totals: $ 746,574.57 | $ 200,970.57

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
	a	b	c	d	e	f	g	h	i	j	k	l		
1.00	NetApp AFF 8040		31.20	65.00			$ -	$ -		$ -	$ -	$ -		
1.01	SW-2-CL-BASE	SW-2,BASE,CL,NODE ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
1.02	AFF8040-R6	AFF8040-R6			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
1.03	DS224C-AF-3.8-24X-0	SSD SHLF,AFF,12G,24X3.8TB,NSE,OP,-C ; Model: AFF8040A			$259,435.00	73.5%	$ 190,684.73	$ 68,750.28	1	$ 259,435.00	$ 68,750.28	$ 190,684.73	Included	Included
1.04	AFF8040A-001-R6	AFF8040 HA SYSTEM ; Model: AFF8040A			$8,600.00	73.5%	$ 6,321.00	$ 2,279.00	2	$ 17,200.00	$ 4,558.00	$ 12,642.00	Included	Included
1.05	X6227-R6-C	CHASSIS,FAS8040/60/80 W/CNTRL SLOTS,AC PS,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
1.06	X6536-R6-C	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP,-C ; Model: AFF8040A			$150.00	73.5%	$ 110.25	$ 39.75	8	$ 1,200.00	$ 318.00	$ 882.00	Included	Included
1.07	X6566B-2-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,2M,-C ; Model: AFF8040A			$80.00	10.0%	$ 8.00	$ 72.00	4	$ 320.00	$ 288.00	$ 32.00	Included	Included
1.08	X66021A-R6-C	CABLE,STORAGE,MINISAS HD,QSFP,12G,2M,-C ; Model: AFF8040A			$125.00	73.5%	$ 91.88	$ 33.13	4	$ 500.00	$ 132.50	$ 367.50	Included	Included
1.09	ALL-FLASH-OPTIMIZE	OPTIMIZED SSD PERSONALITY ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
1.10	NAS-OPTIMIZED	OPTIMIZED NAS PERSONALITY ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
1.11	X6599A-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS80X0,-C ; Model: AFF8040A			$795.00	73.5%	$ 584.33	$ 210.68	8	$ 6,360.00	$ 1,685.40	$ 4,674.60	Included	Included
1.12	X-02659-00-C	RAIL,KIT,4-POST,RND/SQ-HOLE,ADJ,24-32,-C ; Model: AFF8040A			$115.00	73.5%	$ 84.53	$ 30.48	2	$ 230.00	$ 60.95	$ 169.05	Included	Included
1.13	DOC-AFF80X0-C	DOCUMENTS,AFF80X0,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
1.14	X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	4	$ -	$ -	$ -	Included	Included
1.15	SW-2-8040A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,8040A,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
1.16	DATA-AT-REST-ENCR	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
1.17	SW-FLASH-BUNDLE-R	SW,FLASHBUNDLE,PER-0.1TB,HCAPULTPERF,-C ; Model: AFF8040A			$367.28	73.5%	$ 269.95	$ 97.33	912	$ 334,959.36	$ 88,764.23	$ 246,195.13	Included	Included
1.18	CS-INSTALL-AFF	BASE INSTALLATION, ALL FLASH FAS SYSTEM ; Model: AFF8040A			$5,000.00	15.0%	$ 750.00	$ 4,250.00	1	$ 5,000.00	$ 4,250.00	$ 750.00	Included	Included
1.19	CS-O2-4HR-VA	SUPPORTEDGE PREMIUM 4HR ONSITE,VA Service Months: 60.0; Service Start Date: 2/22/20			$121,370.61	73.5%	$ 89,207.40	$ 32,163.21	1	$ 121,370.61	$ 32,163.21	$ 89,207.40	Included	Included

-add additional rows as necessary-

Table 2
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage via scale-out incrementally, add additional rows as necessary

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
	a	b	c	d	e	f	g	h	i	j	k	l		
2.00	xxx-xxx-xxxx	Additional Flash Storage Unit necessary - 65TB built in up front					$ -	$ -	1	$ -	$ -	$ -		

-add additional rows as necessary-

Table 3 Baseline configuration for Tier 3 Low Estimate
Use the worksheet below to described required hardware, software and licensing components for Phase A and useable storage of: 1,295.09TB TB

Table 3 Totals: $ 1,202,747.29 | $ 379,430.16

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
	a	b	c	d	e	f	g	h	i	j	k	l		
3.00	NetApp [illegible]		2.4PB	1.295PB			$ -	$ -		$ -	$ -	$ -	Included	
3.01	SW-2-CL-BASE	SW-2,BASE,CL,NODE ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.02	FAS8200	FAS8200			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.03	FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE ; Model: FAS8200A			$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	2	$ 45,000.00	$ 13,950.00	$ 31,050.00	Included	Included
3.04	X1133A-R6-C	HBA,4-PORT FCP TRGT/INIT 16GB PCIE W/SFP+,-C ; Model: FAS8200A			$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	2	$ 10,400.00	$ 3,224.00	$ 7,176.00	Included	Included
3.05	X6566B-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A			$60.00	10.0%	$ 6.00	$ 54.00	4	$ 240.00	$ 216.00	$ 24.00	Included	Included
3.06	X6566B-3-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,3M,-C ; Model: FAS8200A			$95.00	10.0%	$ 9.50	$ 85.50	8	$ 760.00	$ 684.00	$ 76.00	Included	Included
3.07	X66250-5-C	CABLE,LC-LC,OM4,5M,-C ; Model: FAS8200A			$160.00	69.0%	$ 110.40	$ 49.60	16	$ 2,560.00	$ 793.60	$ 1,766.40	Included	Included
3.08	X6235-C	CHASSIS,FAS8200,AFF-A300,AC PS,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.09	X1960-R6-C	CLUSTERNET INTERCONNECT,16PT,10GB,-C ; Model: FAS8200A			$5,075.00	10.0%	$ 507.50	$ 4,567.50	2	$ 10,150.00	$ 9,135.00	$ 1,015.00	Included	Included
3.10	DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.11	X1985-R6-C	12-NODE CLUSTER CABLE LABEL KIT,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.12	X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6	$ -	$ -	$ -	Included	Included
3.13	X-02659-00-C	RAIL,KIT,4-POST,RND/SQ-HOLE,ADJ,24-32,-C ; Model: FAS8200A			$115.00	69.0%	$ 79.35	$ 35.65	1	$ 115.00	$ 35.65	$ 79.35	Included	Included
3.14	X6596-R6-C	SFP+ FC OPTICAL,16GB,-C ; Model: FAS8200A			$1,035.00	69.0%	$ 714.15	$ 320.85	4	$ 4,140.00	$ 1,283.40	$ 2,856.60	Included	Included
3.15	X6599A-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS80X0,-C ; Model: FAS8200A			$795.00	69.0%	$ 548.55	$ 246.45	4	$ 3,180.00	$ 985.80	$ 2,194.20	Included	Included
3.16	OS-ONTAP1-PREM3R	SW,3RD PARTY STOR,PREMIUM BDLE,PRICE,8200A,-C ; Model: FAS8200A			$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	2	$ 160,000.00	$ 49,600.00	$ 110,400.00	Included	Included
3.17	SW-2-8200A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
3.18	SW-2-8200A-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLED,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
3.19	SW-2-8200A-VN-STOR	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A			$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	2	$ 16,400.00	$ 5,084.00	$ 11,316.00	Included	Included
3.20	DATA-AT-REST-ENCR	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
3.21	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017;			$130,483.26	69.0%	$ 90,033.45	$ 40,449.81	1	$ 130,483.26	$ 40,449.81	$ 90,033.45	Included	Included
3.22	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	69.0%	$ 1,090.20	$ 489.80	60	$ 94,800.00	$ 29,388.00	$ 65,412.00	Included	Included
3.23	E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	1	$ 14,120.00	$ 4,377.20	$ 9,742.80	Included	Included
3.24	E5600-R6	E5600-R6			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.25	OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	69.0%	$ 3.64	$ 1.64	6,000	$ 31,680.00	$ 9,820.80	$ 21,859.20	Included	Included
3.26	DOC-PFK-E-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.27	E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$21,631.00	69.0%	$ 14,925.39	$ 6,705.61	2	$ 43,262.00	$ 13,411.22	$ 29,850.78	Included	Included
3.28	X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600			$408.00	69.0%	$ 281.52	$ 126.48	2	$ 816.00	$ 252.96	$ 563.04	Included	Included
3.29	X-56018-00-0E-C	HIC,E5600-48GB,16GB FC,4-PORTS,0E,-C ; Model: 5600			$2,153.00	69.0%	$ 1,485.57	$ 667.43	2	$ 4,306.00	$ 1,334.86	$ 2,971.14	Included	Included
3.30	X-48895-00-0E-R6-C	SFP,10GB iSCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 124.00	8	$ 3,200.00	$ 992.00	$ 2,208.00	Included	Included
3.31	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	2	$ 150.00	$ 46.50	$ 103.50	Included	Included
3.32	DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
3.33	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	1	$ 186.00	$ 57.66	$ 128.34	Included	Included
3.34	SW-5600-FDE-SKM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600			$2,720.00	69.0%	$ 1,876.80	$ 843.20	1	$ 2,720.00	$ 843.20	$ 1,876.80	Included	Included
3.35	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017;			$63,590.69	69.0%	$ 43,877.58	$ 19,713.11	1	$ 63,590.69	$ 19,713.11	$ 43,877.58	Included	Included
3.36	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	69.0%	$ 1,090.20	$ 489.80	180	$ 284,400.00	$ 88,164.00	$ 196,236.00	Included	Included
3.37	E-X5680A-DM-0E-R6	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,DM,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	3	$ 42,360.00	$ 13,131.60	$ 29,228.40	Included	Included
3.38	E5600-EXP-R6	E5600-EXP-R6			$0.00	0.0%	$ -	$ -	3	$ -	$ -	$ -	Included	Included
3.39	OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	69.0%	$ 3.64	$ 1.64	18,000	$ 95,040.00	$ 29,462.40	$ 65,577.60	Included	Included
3.40	E-X30030A-0E-R6-C	ESM,SBB-2,0E,-C ; Model: 5600			$780.00	69.0%	$ 538.20	$ 241.80	6	$ 4,680.00	$ 1,450.80	$ 3,229.20	Included	Included
3.41	X-20004-00-0E-R6-C	CABLE,MINISAS,3M,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	6	$ 450.00	$ 139.50	$ 310.50	Included	Included
3.42	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	3	$ 558.00	$ 172.98	$ 385.02	Included	Included
3.43	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017;			$43,924.78	69.0%	$ 30,308.10	$ 13,616.68	3	$ 131,774.34	$ 40,850.05	$ 90,924.29	Included	Included
3.44	X6536-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP ; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	8	$ 1,200.00	$ 372.00	$ 828.00	Included	Included
3.45	X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600			$13.00	69.0%	$ 8.97	$ 4.03	2	$ 26.00	$ 8.06	$ 17.94	Included	Included

-add additional rows as necessary-

Table 4
Incremental Storage for Tier 3 purchased after baseline configuration above
In this table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
	a	b	c	d	e	f	g	h	i	j	k	l		
4.00	NetApp [illegible]													
4.01	SW-2-CL-BASE	SW-2,BASE,CL,NODE ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.02	FAS8200	FAS8200			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.03	FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE ; Model: FAS8200A			$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	2	$ 45,000.00	$ 13,950.00	$ 31,050.00	Included	Included
4.04	X1133A-R6-C	HBA,4-PORT FCP TRGT/INIT 16GB PCIE W/SFP+,-C ; Model: FAS8200A			$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	2	$ 10,400.00	$ 3,224.00	$ 7,176.00	Included	Included
4.05	X6566B-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A			$60.00	10.0%	$ 6.00	$ 54.00	4	$ 240.00	$ 216.00	$ 24.00	Included	Included
4.06	X6566B-3-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,3M,-C ; Model: FAS8200A			$95.00	10.0%	$ 9.50	$ 85.50	8	$ 760.00	$ 684.00	$ 76.00	Included	Included
4.07	X66250-5-C	CABLE,LC-LC,OM4,5M,-C ; Model: FAS8200A			$160.00	69.0%	$ 110.40	$ 49.60	16	$ 2,560.00	$ 793.60	$ 1,766.40	Included	Included
4.08	X6235-C	CHASSIS,FAS8200,AFF-A300,AC PS,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.09	X1960-R6-C	CLUSTERNET INTERCONNECT,16PT,10GB,-C ; Model: FAS8200A			$5,075.00	10.0%	$ 507.50	$ 4,567.50	2	$ 10,150.00	$ 9,135.00	$ 1,015.00	Included	Included
4.10	DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.11	X1985-R6-C	12-NODE CLUSTER CABLE LABEL KIT,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.12	X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6	$ -	$ -	$ -	Included	Included
4.13	X-02659-00-C	RAIL,KIT,4-POST,RND/SQ-HOLE,ADJ,24-32,-C ; Model: FAS8200A			$115.00	69.0%	$ 79.35	$ 35.65	1	$ 115.00	$ 35.65	$ 79.35	Included	Included
4.14	X6596-R6-C	SFP+ FC OPTICAL,16GB,-C ; Model: FAS8200A			$1,035.00	69.0%	$ 714.15	$ 320.85	4	$ 4,140.00	$ 1,283.40	$ 2,856.60	Included	Included
4.15	X6599A-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS80X0,-C ; Model: FAS8200A			$795.00	69.0%	$ 548.55	$ 246.45	4	$ 3,180.00	$ 985.80	$ 2,194.20	Included	Included
4.16	OS-ONTAP1-PREM3R	SW,3RD PARTY STOR,PREMIUM BDLE,PRICE,8200A,-C ; Model: FAS8200A			$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	2	$ 160,000.00	$ 49,600.00	$ 110,400.00	Included	Included
4.17	SW-2-8200A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
4.18	SW-2-8200A-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLED,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
4.19	SW-2-8200A-VN-STOR	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A			$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	2	$ 16,400.00	$ 5,084.00	$ 11,316.00	Included	Included
4.20	DATA-AT-REST-ENCR	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
4.21	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017;			$130,483.26	69.0%	$ 90,033.45	$ 40,449.81	1	$ 130,483.26	$ 40,449.81	$ 90,033.45	Included	Included
4.22	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	69.0%	$ 1,090.20	$ 489.80	60	$ 94,800.00	$ 29,388.00	$ 65,412.00	Included	Included
4.23	E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	1	$ 14,120.00	$ 4,377.20	$ 9,742.80	Included	Included
4.24	E5600-R6	E5600-R6			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.25	OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	69.0%	$ 3.64	$ 1.64	6,000	$ 31,680.00	$ 9,820.80	$ 21,859.20	Included	Included
4.26	DOC-PFK-E-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.27	E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$21,631.00	69.0%	$ 14,925.39	$ 6,705.61	2	$ 43,262.00	$ 13,411.22	$ 29,850.78	Included	Included
4.28	X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600			$408.00	69.0%	$ 281.52	$ 126.48	2	$ 816.00	$ 252.96	$ 563.04	Included	Included
4.29	X-56018-00-0E-C	HIC,E5600-48GB,16GB FC,4-PORTS,0E,-C ; Model: 5600			$2,153.00	69.0%	$ 1,485.57	$ 667.43	2	$ 4,306.00	$ 1,334.86	$ 2,971.14	Included	Included
4.30	X-48895-00-0E-R6-C	SFP,10GB iSCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 124.00	8	$ 3,200.00	$ 992.00	$ 2,208.00	Included	Included
4.31	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	2	$ 150.00	$ 46.50	$ 103.50	Included	Included
4.32	DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
4.33	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	1	$ 186.00	$ 57.66	$ 128.34	Included	Included
4.34	SW-5600-FDE-SKM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600			$2,720.00	69.0%	$ 1,876.80	$ 843.20	1	$ 2,720.00	$ 843.20	$ 1,876.80	Included	Included
4.35	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017;			$63,590.69	69.0%	$ 43,877.58	$ 19,713.11	1	$ 63,590.69	$ 19,713.11	$ 43,877.58	Included	Included
4.36	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	69.0%	$ 1,090.20	$ 489.80	180	$ 284,400.00	$ 88,164.00	$ 196,236.00	Included	Included
4.37	E-X5680A-DM-0E-R6	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,DM,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	3	$ 42,360.00	$ 13,131.60	$ 29,228.40	Included	Included
4.38	E5600-EXP-R6	E5600-EXP-R6			$0.00	0.0%	$ -	$ -	3	$ -	$ -	$ -	Included	Included
4.39	OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	69.0%	$ 3.64	$ 1.64	18,000	$ 95,040.00	$ 29,462.40	$ 65,577.60	Included	Included
4.40	E-X30030A-0E-R6-C	ESM,SBB-2,0E,-C ; Model: 5600			$780.00	69.0%	$ 538.20	$ 241.80	6	$ 4,680.00	$ 1,450.80	$ 3,229.20	Included	Included
4.41	X-20004-00-0E-R6-C	CABLE,MINISAS,3M,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	6	$ 450.00	$ 139.50	$ 310.50	Included	Included
4.42	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	3	$ 558.00	$ 172.98	$ 385.02	Included	Included
4.43	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017;			$43,924.78	69.0%	$ 30,308.10	$ 13,616.68	3	$ 131,774.34	$ 40,850.05	$ 90,924.29	Included	Included
4.44	X6536-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP ; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	8	$ 1,200.00	$ 372.00	$ 828.00	Included	Included
4.45	X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600			$13.00	69.0%	$ 8.97	$ 4.03	2	$ 26.00	$ 8.06	$ 17.94	Included	Included

-add additional rows as necessary-

Table 5
Professional Services for Phase A Low
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move files and train city staff for Phase A Low

Table 5 Totals: $ 68,940.00 | $ 62,046.00

Item	Part Number	Part Description			List Price Per Hour	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Number of Hours Required	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)
	a	b	c	d	e	f	g	h	i	j	k	l
5.00	CDWSERVICES	Planning and Design			$ 350.00	10%	$ 35.00	$ 315.00	40	$ 14,000.00	$ 12,600.00	$ 1,400.00
5.01	CDWSERVICES	Installation and configuration service			$ 350.00	10%	$ 35.00	$ 315.00	61	$ 21,350.00	$ 19,215.00	$ 2,135.00
5.02	CDWSERVICES	Migration Workshop*			$ 350.00	10%	$ 35.00	$ 315.00	40	$ 14,000.00	$ 12,600.00	$ 1,400.00
5.03	ED-TU-3-ZA	NetApp Training Courses - 3 People, 5 Days			$ 75.00	10%	$ 7.50	$ 67.50	180	$ 13,500.00	$ 12,150.00	$ 1,350.00
5.04	CDWSERVICES	Project Management			$ 210.00	10%	$ 21.00	$ 189.00	29	$ 6,090.00	$ 5,481.00	$ 609.00
5.05	xxx-xxx-xxxx						$ -	$ -		$ -	$ -	$ -

-add additional rows as necessary-

Phase B Low Estimate
For Calendar Year 201R

Table 6 Baseline configuration for Tier 1 Low Estimate
Use the worksheet below to described required hardware, software, and licensing components for Phase B and useable storage of:

TB

Table 6 Totals
$ _____ $ _____

											Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support for This Item

a	b	c	d	e	f	g	h	i	j	k	l
Item Part Number	Part Description	Size In TB	Useable Storage In TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e·g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Years 1-5	Years 1-5
6.00	Existing NetApp KFE B24.0 from Phase A	97.20	65.00			$ -	$ -		$ -	$ -	$ -		
6.01						$ -	$ -		$ -	$ -	$ -		
6.02	Since the initial outlay of 65TB exceeds your total requests, we wanted to show that there is no need to add controllers and					$ -	$ -		$ -	$ -	$ -		
6.03	capacity in Phase B					$ -	$ -		$ -	$ -	$ -		
6.04						$ -	$ -		$ -	$ -	$ -		
	-add additional rows as necessary-												

Table 7
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage via scale-out incrementally, add additional rows as necessary

a	b	c	d	e	f	g	h	i	j	k	l
Item Part Number	Part Description	Size In TB	Useable Storage In TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e·g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Years 1-5	Years 1-5
7.00 xxx-xxx-xxxx	Additional Flash Storage Unnecessary - 65TB built in up front					$ -	$ -		$ -	$ -	$ -		
	-add additional rows as necessary-												

Table 8 Baseline configuration for Tier 3 Low Estimate
Use the worksheet below to described required hardware, software and licensing components for Phase B and suitable storage of:

1,735.2018*** TB

Table 8 Totals
$ 1,202,747.39 $ 378,430.16

a	b	c	d	e	f	g	h	i	j	k	l	Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support For This Item
Item Part Number	Part Description	Size In TB	Useable Storage In TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e·g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Years 1-5	Years 1-5
8.00	NetApp E5700			$0.00	0.0%	$ -	$ -	3	$ -	$ -	$ -	Included	Included
8.01 SW-2-BASE-CL-NODE-C	SW-2,BASE,CL,NODE,-C; Model: FAS8200A			$0.00	0.0%	$ -	$ -	3	$ -	$ -	$ -	Included	Included
8.02 FAS8200	FAS8200			$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	2	$ 45,000.00	$ 13,950.00	$ 31,050.00	Included	Included
8.03 FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE; Model: FAS8200A			$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	2	$ 10,400.00	$ 3,224.00	$ 7,176.00	Included	Included
8.04 X1132A-R6-C	HBA,4-PORT FCP TRGT,INIT 16GB PCIE W/SFP,-C; Model: FAS8200A			$60.00	10.0%	$ 6.00	$ 54.00	4	$ 240.00	$ 216.00	$ 24.00	Included	Included
8.05 X65648-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A			$93.00	10.0%	$ 9.30	$ 83.70	8	$ 744.00	$ 669.60	$ 74.30	Included	Included
8.06 X65668-3-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,3M,-C ; Model: FAS8200A			$160.00	69.0%	$ 110.40	$ 49.60	16	$ 2,560.00	$ 793.60	$ 1,766.40	Included	Included
8.07 X66250-R6-C	CABLE,1-C,0.5M,5M,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
8.08 X6235-C	CHASSIS,FAS8200,AFF-A300,AC PS,-C ; Model: FAS8200A			$5,075.00	10.0%	$ 507.50	$ 4,567.50	2	$ 10,150.00	$ 9,135.00	$ 1,015.00	Included	Included
8.09 X1960-86-C	CLUSTERNET INTER-CONNECT,16PT,10GB,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
8.10 DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
8.11 X1985-R6-C	12-NODE CLUSTER CABLE LABEL KIT,-C; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6	$ -	$ -	$ -	Included	Included
8.17 X800-070-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: FAS8200A			$115.00	69.0%	$ 79.35	$ 35.65	4	$ 115.00	$ 35.65	$ 79.35	Included	Included
8.13 X-048-59-04-C	RAIL KIT,4-POST,RMU921-HOLE,ADJ,24-32,-C ; Model: FAS8200A			$1,035.00	69.0%	$ 714.15	$ 320.85	4	$ 4,140.00	$ 1,283.40	$ 2,856.60	Included	Included
8.14 X6306-R6-C	SFP+ FC OPTICAL 16GB,-C ; Model: FAS8200A			$795.00	69.0%	$ 548.55	$ 246.45	4	$ 3,180.00	$ 985.80	$ 2,194.20	Included	Included
8.15 X6596A-R6-C	SFP+ OPTICAL 10GE SHORTWAVE,FAS8200,-C ; Model: FAS8200A			$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	2	$ 160,000.00	$ 49,600.00	$ 110,400.00	Included	Included
8.16 OS-ONTAP1-PREM1NL-C	SW-1 SW,3RD PARTY STOR,PREMIUM BDLE,PRICE,B2G0A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
8.17 SW-2-8200A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,B200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
8.18 SW-2-8200A-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLED,8200A,-C ; Model: FAS8200A			$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	2	$ 16,400.00	$ 5,084.00	$ 11,316.00	Included	Included
8.19 SW-2-8200A-VN-STOR	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
8.20 DATA-AT-REST-ENCR	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A			$130,483.26	69.0%	$ 90,033.45	$ 40,449.81	1	$ 130,483.26	$ 40,449.81	$ 90,033.45	Included	Included
8.21 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: FAS8200A			$1,560.00	69.0%	$ 1,090.20	$ 489.80	60	$ 94,800.00	$ 29,388.00	$ 65,412.00	Included	Included
8.22 E-X4121A-0E-C	DSK DRV,10TB,7.2K,HIPS,DE6600,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	1	$ 14,120.00	$ 4,377.20	$ 9,742.80	Included	Included
8.23 E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2P5U,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
8.24 E5600-R6	E5600-R6			$5.28	69.0%	$ 3.64	$ 1.64	6,800	$ 31,680.00	$ 9,920.60	$ 21,859.20	Included	Included
8.25 OS-SANTRICITY-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,OE,-C ; Model: 5600			$21,631.00	69.0%	$ 14,915.39	$ 6,705.61	2	$ 43,262.00	$ 13,411.22	$ 29,850.78	Included	Included
8.26 DOC-PFK-E-SERIES-06	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$408.00	69.0%	$ 281.52	$ 126.48	2	$ 816.00	$ 252.96	$ 563.04	Included	Included
8.27 E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$2,154.00	69.0%	$ 1,485.57	$ 667.43	2	$ 4,308.00	$ 1,334.86	$ 2,973.14	Included	Included
8.28 X-4461U-00-0E-C	BATTERY,E3400,E5600,E3600,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 124.00	8	$ 3,200.00	$ 992.00	$ 2,208.00	Included	Included
8.29 X-56608-00-0E-C	HIC,E5600-48GB,16GB FC,4-PORT,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	8	$ 150.00	$ 46.50	$ 103.50	Included	Included
8.30 X-48855-00-0E-R6-C	SFP,16GB (SCSI/16GB FC,UNIFIED),E-SERIES,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
8.31 X-2001A-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	1	$ 186.00	$ 57.66	$ 128.34	Included	Included
8.32 DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$3,710.00	69.0%	$ 2,876.90	$ 843.20	1	$ 2,720.00	$ 843.20	$ 1,876.90	Included	Included
8.33 X-50013-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$63,560.69	69.0%	$ 43,877.58	$ 19,713.11	1	$ 63,560.69	$ 19,713.11	$ 43,877.58	Included	Included
8.35 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 5600			$1,560.00	69.0%	$ 1,090.20	$ 489.80	180	$ 284,400.00	$ 88,164.00	$ 196,236.00	Included	Included
8.36 E-X4121A-0E-C	DSK DRV,10TB,7.2K,HIPS,DE6600,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	3	$ 42,360.00	$ 13,131.60	$ 29,228.40	Included	Included
8.37 E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2P5U,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
8.38 E5600-EXP-R6	E5600-EXP-R6			$5.28	69.0%	$ 3.64	$ 1.64	18,000	$ 95,040.00	$ 29,462.40	$ 65,577.60	Included	Included
8.39 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$780.00	69.0%	$ 538.20	$ 241.80	6	$ 4,680.00	$ 1,450.80	$ 3,229.20	Included	Included
8.40 E-X3002DA-0E-R6-C	ESM,58B-2,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	6	$ 450.00	$ 139.50	$ 310.50	Included	Included
8.41 X-2004A-00-0E-R6-C	CABLE,MINISAS,3M,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	3	$ 558.00	$ 172.98	$ 385.02	Included	Included
8.42 X-50013-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$43,924.78	69.0%	$ 30,308.30	$ 13,616.48	3	$ 131,774.34	$ 40,850.05	$ 90,924.29	Included	Included
8.43 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	8	$ 1,200.00	$ 372.00	$ 828.00	Included	Included
8.44 X6598-R6	CABLE,CNTLR SHELF,1.5M W/SWITCH,SAS,CFC,DP ; Model: 5600			$13.00	69.0%	$ 8.97	$ 4.03	2	$ 26.00	$ 8.06	$ 17.94	Included	Included
8.45 X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600												
	-add additional rows as necessary-												

Table 9
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

a	b	c	d	e	f	g	h	i	j	k	l	Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support For This Item
Item Part Number	Part Description	Size In TB	Useable Storage In TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e·g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Years 1-5	Years 1-5
9.00	NetApp E5700 + 3.64TB			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
9.01 SW-2-CL-BASE	SW-2,BASE,CL,NODE; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
9.02 FAS8200	FAS8200			$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	2	$ 45,000.00	$ 13,950.00	$ 31,050.00	Included	Included
9.03 FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE; Model: FAS8200A			$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	2	$ 10,400.00	$ 3,224.00	$ 7,176.00	Included	Included
9.04 X1132A-R6-C	HBA,4-PORT FCP TRGT,INIT 16GB PCIE W/SFP,-C; Model: FAS8200A			$60.00	10.0%	$ 6.00	$ 54.00	4	$ 240.00	$ 216.00	$ 24.00	Included	Included
9.05 X65648-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A			$93.00	10.0%	$ 9.30	$ 83.70	8	$ 744.00	$ 669.60	$ 74.30	Included	Included
9.06 X65668-3-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,3M,-C ; Model: FAS8200A			$160.00	69.0%	$ 110.40	$ 49.60	16	$ 2,560.00	$ 793.60	$ 1,766.40	Included	Included
9.07 X66250-C	CABLE,1-C,0.5M,5M,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
9.08 X6235-C	CHASSIS,FAS8200,AFF-A300,AC PS,-C ; Model: FAS8200A			$5,075.00	10.0%	$ 507.50	$ 4,567.50	2	$ 10,150.00	$ 9,135.00	$ 1,015.00	Included	Included
9.09 X1960-R6-C	CLUSTERNET INT ER-CONNECT,16PT,10GB,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
9.10 DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
9.11 X1985-R6-C	12-NODE CLUSTER CABLE LABEL KIT,-C; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6	$ -	$ -	$ -	Included	Included
9.12 X800-070-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: FAS8200A			$115.00	69.0%	$ 79.35	$ 35.65	1	$ 115.00	$ 35.65	$ 79.35	Included	Included
9.13 X-048-59-04-C	RAIL KIT,4-POST,RMU921-HOLE,ADJ,24-32,-C ; Model: FAS8200A			$1,035.00	69.0%	$ 714.15	$ 320.85	4	$ 4,140.00	$ 1,283.40	$ 2,856.60	Included	Included
9.14 X6306-R6-C	SFP+ FC OPTICAL 16GB,-C ; Model: FAS8200A			$795.00	69.0%	$ 548.55	$ 246.45	4	$ 3,180.00	$ 985.80	$ 2,194.20	Included	Included
9.15 X6596A-R6-C	SFP+ OPTICAL 10GE SHORTWAVE,FAS8200,-C ; Model: FAS8200A			$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	2	$ 160,000.00	$ 49,600.00	$ 110,400.00	Included	Included
9.16 OS-ONTAP1-PREM1NL	SW,3RD PARTY STOR,PREMIUM BDLE,PRICE,B2G0A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
9.17 SW-2-8200A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,B200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
9.18 SW-2-8200A-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLED,8200A,-C ; Model: FAS8200A			$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	2	$ 16,400.00	$ 5,084.00	$ 11,316.00	Included	Included
9.19 SW-2-8200A-VN-STOR	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
9.20 DATA-AT-REST-ENCR	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A			$130,483.26	69.0%	$ 90,033.45	$ 40,449.81	1	$ 130,483.26	$ 40,449.81	$ 90,033.45	Included	Included
9.21 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 5600			$1,560.00	69.0%	$ 1,090.20	$ 489.80	60	$ 94,800.00	$ 29,388.00	$ 65,412.00	Included	Included
9.22 E-X4121A-0E-C	DSK DRV,10TB,7.2K,HIPS,DE6600,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	1	$ 14,120.00	$ 4,377.20	$ 9,742.80	Included	Included
9.23 E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2P5U,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
9.24 E5600-R6	E5600-R6			$5.26	69.0%	$ 3.64	$ 1.64	6,000	$ 31,680.00	$ 9,820.40	$ 21,859.20	Included	Included
9.25 OS-SANTRICITY2-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$21,631.00	69.0%	$ 14,915.39	$ 6,705.61	2	$ 43,262.00	$ 13,411.22	$ 29,850.78	Included	Included
9.26 DOC-PFK-E-SERIES-06	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$408.00	69.0%	$ 281.52	$ 126.48	2	$ 816.00	$ 252.96	$ 563.04	Included	Included
9.27 E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$2,154.00	69.0%	$ 1,485.57	$ 667.43	2	$ 4,308.00	$ 1,334.86	$ 2,973.14	Included	Included
9.28 X-4461U-00-0E-C	BATTERY,E3400,E5600,E3600,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 124.00	8	$ 3,200.00	$ 992.00	$ 2,208.00	Included	Included
9.29 X-56608-00-0E-C	HIC,E5600-48GB,16GB FC,4-PORT,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	2	$ 150.00	$ 46.50	$ 103.50	Included	Included
9.30 X-48855-00-0E-R6-C	SFP,16GB (SCSI/16GB FC,UNIFIED),E-SERIES,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	2	$ -	$ -	$ -	Included	Included
9.31 X-2000-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	1	$ 186.00	$ 57.66	$ 128.34	Included	Included
9.32 DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$2,720.00	69.0%	$ 1,876.80	$ 843.20	1	$ 2,720.00	$ 843.20	$ 1,876.80	Included	Included
9.33 X-50013-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$63,560.69	69.0%	$ 43,877.58	$ 19,713.11	1	$ 63,560.69	$ 19,713.11	$ 43,877.58	Included	Included
9.34 SW-5600-7DF-5XM-0E	SW,FDE SEC KEY MGMT,5600,0E,-C ; Model: 5600			$1,560.00	69.0%	$ 1,090.20	$ 489.80	180	$ 244,400.00	$ 88,164.00	$ 196,236.00	Included	Included
9.35 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	3	$ 42,360.00	$ 13,131.60	$ 29,228.40	Included	Included
9.36 E-X4121A-0E-C	DSK DRV,10TB,7.2K,HIPS,DE6600,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	$ -	Included	Included
9.37 E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2P5U,0E,-C ; Model: 5600			$5.28	69.0%	$ 3.64	$ 1.64	18,000	$ 95,040.00	$ 29,462.40	$ 65,577.60	Included	Included
9.38 E5600-EXP-R6	E5600-EXP-R6			$780.00	69.0%	$ 538.20	$ 241.80	6	$ 4,680.00	$ 1,450.80	$ 3,229.20	Included	Included
9.39 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	6	$ 450.00	$ 139.50	$ 310.50	Included	Included
9.40 E-X3002DA-0E-R6-C	ESM,58B-2,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	3	$ 558.00	$ 172.98	$ 385.02	Included	Included
9.41 X-2004A-00-0E-R6-C	CABLE,MINISAS,3M,0E,-C ; Model: 5600			$43,924.78	69.0%	$ 30,308.30	$ 13,616.48	3	$ 131,774.34	$ 40,850.05	$ 90,924.29	Included	Included
9.42 X-50013-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	8	$ 1,200.00	$ 372.00	$ 828.00	Included	Included
9.43 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 5600			$13.00	69.0%	$ 8.97	$ 4.03	2	$ 26.00	$ 8.06	$ 17.94	Included	Included
9.44 X6536-R6	CABLE,CNTLR SHELF,1.5M W/SWITCH,SAS,CFC,DP ; Model: 5600												
9.45 X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600												
	-add additional rows as necessary-												

Table 10
Professional Services for Phase B Low
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move files and train city staff for Phase B Low

Table 10 Totals
$ 38,500.00 $ 34,650.00

a	b	c	d	e	f	g	h	i	j
Item Part Number	Part Description			List Price Per Hour	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e·g)	Number of Hours Required	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)
10.00 CITYSERVICES	Planning and Design			$ 350.00	10%	$ 35.00	$ 315.00	40	$ 14,000.00	$ 12,600.00	$ 1,400.00
10.01 CITYSERVICES	Installation and configuration service			$ 350.00	10%	$ 35.00	$ 315.00	55	$ 21,350.00	$ 19,215.00	$ 2,135.00
10.02 CITYSERVICES	Project Management			$ 230.00	10%	$ 21.00	$ 189.00	15	$ 3,150.00	$ 2,835.00	$ 315.00
10.03 xxx-xxx-xxxx						$ -	$ -		$ -	$ -	$ -
	-add additional rows as necessary-										

Phase A High Estimate
For Calendar Year 2017

Table 11 Baseline configuration for Tier 1 High Estimate
Use the worksheet below to described required hardware, software and licensing for Phase A and usable storage of:

Table 11 Totals

Table 12
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage on scale-out incrementally, add additional rows as necessary

Table 13 Baseline configuration for Tier 3 Low Estimate
Use the worksheet below to described required hardware, software and licensing for Phase A and useable storage of:

Table 13 Totals

Table 14
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage on scale-out incrementally, add additional rows as necessary

Table 15
Professional Services for Phase A High
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move-that and train any staff for Phase A high.

Table 15 Totals

Phase II High Estimate
For Calendar Year 2016

Table 16 Baseline Configuration for Tier 3 High Estimate
Use the worksheet below to described required hardware, software, and licensing for Phase II and usable storage of:

Table 16 Totals
$ - $ -

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*f)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Year 1	Bid Price For On-Site Maintenance and/or Support for This Item Year 1
16.00		Baseline NetApp 65Tb Built From Phase II	91.2TB	65TB			$ -	$ -		$ -	$ -	$ -		
16.01							$ -	$ -		$ -	$ -	$ -		
16.02	Since the initial outlay of 65Tb exceeds your total request, we wanted to show that there is no						$ -	$ -		$ -	$ -	$ -		
16.03		need to add controllers and capacity in Phase II					$ -	$ -		$ -	$ -	$ -		
16.04							$ -	$ -		$ -	$ -	$ -		
16.05							$ -	$ -		$ -	$ -	$ -		
XX.ER	xxx-xxx-xxxx													
	-add additional rows as necessary-													

Table 17
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*f)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Year 1	Bid Price For On-Site Maintenance and/or Support for This Item Year 1
17.00	xxx-xxx-xxxx	Additional Flash Storage Unnecessary - 65Tb built in up front					$ -	$ -	1 $	$ -	$ -	$ -		
17.01	xxx-xxx-xxxx						$ -	$ -	1 $	$ -	$ -	$ -		
	-add additional rows as necessary-													

Table 18 Baseline Configuration for Tier 3 High Estimate
Use the worksheet below to described required hardware, software and licensing for Phase II and usable storage of: 370.0TB   TB

Table 18 Totals
$ 3,445,241.87 $ 3,334,316,445

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	extended list price (e*f)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Year 1	Bid Price For On-Site Maintenance and/or Support for This Item Year 1
18.00		NetApp 8200 - 3.0k/tb											Incl/uded	Included
18.01	SW-7-CL-BASE	SW-7,BASE,CL,NODE,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.02	FAS8200	FAS8200			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.03	FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE ; Model: FAS8200A			$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	3 $	135,000.00 $	41,850.00 $	93,150.00	Included	Included
18.04	X1133A-R6-C	NBA,4-PORT PCP TRGT/INT 16GB PCIE W/SFP+,-C ; Model: FAS8200A			$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	32 $	33,200.00 $	9,672.00 $	21,528.00	Included	Included
18.05	X65668-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A			$60.00	10.0%	$ 8.00	$ 54.00	12 $	720.00 $	648.00 $	72.00	Included	Included
18.06	X65668-2-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,2M,-C ; Model: FAS8200A			$95.00	10.0%	$ 9.50	$ 85.50	24 $	2,280.00 $	2,052.00 $	228.00	Included	Included
18.07	X66250-5-C	CABLE,LC-LC,OM4,5M,-C ; Model: FAS8200A			$180.00	69.0%	$ 130.40	$ 49.60	42 $	7,680.00 $	2,340.80 $	5,280.20	Included	Included
18.08	X6255-C	CHASSIS,FAS8200,AFF-A300,AC PS,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.09	X1960-R6-C	CLUSTER INT INTER-CONNECT,16FT,16GB,-C ; Model: FAS8200A			$6,075.00	10.0%	$ 507.50	$ 4,567.50	3 $	30,450.00 $	27,405.00 $	3,045.00	Included	Included
18.10	DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.11	X1985-R6-C	12-MODE CLUSTER CABLE LABEL KIT,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.12	X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: FAS8200A			$325.00	69.0%	$ 79.35	$ 35.65	14 $	345.00 $	106.95 $	238.05	Included	Included
18.13	X-02859-00-C	RAIL KIT-4-POST,R,ND/SQ HOLE,ADJ,24-32,-C ; Model: FAS8200A			$1,035.00	69.0%	$ 714.15	$ 320.85	32 $	32,420.00 $	3,850.20 $	8,569.80	Included	Included
18.14	X6566-R6-C	SFP+ FC OPTICAL,16GB,-C ; Model: FAS8200A			$795.00	69.0%	$ 548.55	$ 246.45	32 $	9,540.00 $	2,957.40 $	6,582.60	Included	Included
18.15	X65994-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS8200,-C ; Model: FAS8200A			$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	6 $	480,000.00 $	348,300.00 $	331,200.00	Included	Included
18.16	OS-ONTAP3-PREM3XC	SW,3AD PARTY STOR,PREMIUM BDLE,PRICE,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6 $	$ -	$ -	$ -	Included	Included
18.17	SW-2-82004-MVE-C	SW,DATA AT REST ENCRYPTION EXABL02,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6 $	$ -	$ -	$ -	Included	Included
18.18	SW-2-82004-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLE,8200A,-C ; Model: FAS8200A			$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	6 $	49,200.00 $	15,252.00 $	33,948.00	Included	Included
18.19	SW-2-82004-VM-STOR3	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6 $	$ -	$ -	$ -	Included	Included
18.20	DATA-A-REST-EN-CRIT	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A			$130,483.20	69.0%	$ 90,033.45	$ 40,449.81	3 $	391,449.23 $	121,349.43 $	278,100.35	Included	Included
18.21	CI-01-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Monitor 60.0; Service Start Date: 2/21/2017; Model: FAS			$1,580.00	69.0%	$ 1,090.20	$ 489.80	180 $	284,400.00 $	83,364.00 $	196,786.00	Included	Included
18.22	E-X4121A-0E-C	DISK DRV,10TB,7.2K,DPS,DE6600,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	3 $	42,360.00 $	13,131.60 $	29,228.40	Included	Included
18.23	E-X5860A-00-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,DPS,U,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.24	E5600-R6	E5600-R6			$5.31	69.0%	$ 3.64	$ 1.64	18,000 $	95,040.00 $	29,462.40 $	65,577.60	Included	Included
18.25	OS-SANTRICITY-CAP1	OS ENABLE PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.26	DOC-PFK-L-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$23,631.00	69.0%	$ 14,919.59	$ 6,705.61	6 $	129,786.00 $	40,233.66 $	89,552.34	Included	Included
18.27	E5600-A4K60-0E-C	E5600A,4K60 CONTROLLER,NO HIC,0E,-C ; Model: 5600			$408.00	69.0%	$ 281.52	$ 126.48	6 $	2,448.00 $	758.88 $	1,689.12	Included	Included
18.28	X-44659-00-0E-C	BATTERY,E5600,E5500,15600,0E,-C ; Model: 5600			$2,155.00	69.0%	$ 1,485.97	$ 667.43	6 $	12,916.00 $	4,006.26 $	8,913.42	Included	Included
18.29	X-56014-00-0E-C	HIC,E5600-4.8.GB,16GB FC,4-PORTS,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 174.00	24 $	9,600.00 $	2,976.00 $	6,624.00	Included	Included
18.30	X-48435-00-0E-R6-C	SFP,10GB 8GSR/16GB FC,UNI,FIBRE-SERIES,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	6 $	450.00 $	139.50 $	310.50	Included	Included
18.31	X-20004-00-R6-M6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	3 $	$ -	$ -	$ -	Included	Included
18.32	DOC-E-51R-ES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,4U,MSO,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	6 $	558.00 $	172.98 $	385.07	Included	Included
18.33	X-50E13-00-0E-C	POWER CORD,IN0 CABINET,21AC,14-C19,DE6600,0E,-C ; Model: 5600			$2,720.00	69.0%	$ 1,876.80	$ 843.20	3 $	8,160.00 $	2,529.60 $	5,630.40	Included	Included
18.34	SW-5600-FDE-SDM-0E	SW FDE SEC EFY MGMT,5600,0E,-F ; Model: 5600			$63,530.60	69.0%	$ 43,877.58	$ 19,793.11	3 $	190,777.07 $	59,159.34 $	131,632.73	Included	Included
18.35	CS-02-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Monitor 60.0; Service Start Date: 2/23/2017; Model: 56C			$1,580.00	69.0%	$ 1,090.20	$ 489.80	540 $	853,200.00 $	264,492.00 $	588,708.00	Included	Included
18.36	E-X4121A-0E-C	DISK DRV,10TB,7.2K,DPS,DE6600,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	6 $	177,840.00 $	39,394.80 $	87,662.20	Included	Included
18.37	E-X5860A-0N-00-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,DPS,U,0M,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	6 $	$ -	$ -	$ -	Included	Included
18.38	E5600-EXP-R6	15600-EXP-R6			$5.31	0.0%	$ 3.64	$ 1.64	54,000 $	285,120.00 $	88,387.20 $	196,732.80	Included	Included
18.39	OS-SANTRICITY1-CAP1	OS 1TCABLE,PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$780.00	69.0%	$ 538.20	$ 243.80	18 $	14,040.00 $	4,392.60 $	9,647.60	Included	Included
18.40	E-X3060A-0E-M4-C	EXA38B-2,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	33 $	2,530.00 $	418.50 $	931.50	Included	Included
18.41	X-2000A-00-0F-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	9 $	1,674.00 $	518.34 $	1,155.06	Included	Included
18.42	X-50E13-00-0E-C	POWER CORD,IN CABINET 24AC,14-C19,DE6600,0E,-C ; Service Monitor 60.0; Service Start Date: 2/21/2017; Model: 56C			$43,924.74	69.0%	$ 30,308.10	$ 13,616.64	9 $	395,320.97 $	122,550.34 $	272,772.45	Included	Included
18.43	CS-02-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	24 $	3,600.00 $	1,116.00 $	2,484.00	Included	Included
18.44	XEES6-R6	CAN,E,CNTLR SHELF/SWITCH,5M,LC,0E,C0F ; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	24 $	3,600.00 $	1,116.00 $	2,484.00	Included	Included
18.45	X6562-R6	CABLE,INT,DKNET,5M R,M-S CAT6 ; Model: 5600			$13.00	69.0%	$ 8.97	$ 4.03	6 $	78.00 $	24.18 $	53.82	Included	Included
	-add additional rows as necessary-													

Table 19
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Table 20 Totals
$ 1,296,267.30 $ 463,396.16

Item	Part Number	Part Description	Size in TB	Usable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*f)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Year 1	Bid Price For On-Site Maintenance and/or Support for This Item Year 1
19.00		NetApp 8200 - 3.0k/tb			$0.00	0.0%	$ -	$ -	1 $	$ -	$ -	$ -	Included	Included
19.01	SW-7-CL-BASE	SW-7,BASE,CL,NODE,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	1 $	$ -	$ -	$ -	Included	Included
19.02	FAS8200	FAS8200			$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	2 $	45,000.00 $	13,950.00 $	31,050.00	Included	Included
19.03	FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE ; Model: FAS8200A			$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	2 $	10,400.00 $	3,224.00 $	7,176.00	Included	Included
19.04	X1133A-R6-C	NBA,4-PORT PCP TRGT/INT 16GB PCIE W/SFP+,-C ; Model: FAS8200A			$60.00	10.0%	$ 8.00	$ 54.00	4 $	240.00 $	216.00 $	24.00	Included	Included
19.05	X65668-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A			$95.00	10.0%	$ 8.50	$ 85.50	8 $	760.00 $	684.00 $	76.00	Included	Included
19.06	X65668-2-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,2M,-C ; Model: FAS8200A			$160.00	69.0%	$ 110.40	$ 49.60	16 $	2,560.00 $	793.60 $	1,766.40	Included	Included
19.07	X66250-5-C	CABLE,LC-LC,OM4,5M,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2 $	$ -	$ -	$ -	Included	Included
19.08	X6255-C	CHASSIS,FAS8200,AFF-A300,AC PS,-C ; Model: FAS8200A			$6,075.00	10.0%	$ 507.50	$ 4,567.50	2 $	20,150.00 $	9,135.00 $	1,015.00	Included	Included
19.09	X1960-R6-C	CLUSTER INT INTER-CONNECT,16FT,16GB,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2 $	$ -	$ -	$ -	Included	Included
19.10	DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6 $	$ -	$ -	$ -	Included	Included
19.11	X1985-R6-C	12-MODE CLUSTER CABLE LABEL KIT,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	6 $	$ -	$ -	$ -	Included	Included
19.12	X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: FAS8200A			$115.00	69.0%	$ 79.35	$ 35.65	1 $	115.00 $	35.65 $	79.35	Included	Included
19.13	X-02859-00-C	RAIL KIT-4-POST,R,ND/SQ HOLE,ADJ,24-32,-C ; Model: FAS8200A			$1,035.00	69.0%	$ 714.15	$ 320.85	4 $	4,140.00 $	1,243.20 $	2,876.60	Included	Included
19.14	X6566-R6-C	SFP+ FC OPTICAL,16GB,-C ; Model: FAS8200A			$795.00	69.0%	$ 548.55	$ 246.45	4 $	3,180.00 $	985.80 $	2,194.08	Included	Included
19.15	X65994-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS8200,-C ; Model: FAS8200A			$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	2 $	160,000.00 $	49,600.00 $	130,400.00	Included	Included
19.16	OS-ONTAP3-PREM3XC	SW,3AD PARTY STOR,PREMIUM BDLE,PRICE,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2 $	$ -	$ -	$ -	Included	Included
19.17	SW-2-82004-MVE-C	SW,DATA AT REST ENCRYPTION ENABLE,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2 $	$ -	$ -	$ -	Included	Included
19.18	SW-2-82004-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLE,8200A,-C ; Model: FAS8200A			$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	2 $	16,400.00 $	5,084.00 $	11,316.00	Included	Included
19.19	SW-2-82004-VM-STOR3	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A			$0.00	0.0%	$ -	$ -	2 $	$ -	$ -	$ -	Included	Included
19.20	DATA-A7-REST-EN-CRIT	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A			$130,483.26	69.0%	$ 90,033.45	$ 40,449.81	1 $	130,483.26 $	40,449.81 $	90,033.45	Included	Included
19.21	CS-01-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: FAS			$1,580.00	69.0%	$ 1,090.20	$ 489.80	60 $	94,800.00 $	29,384.00 $	65,472.00	Included	Included
19.22	E-X4121A-0E-C	DISK DRV,10TB,7.2K,DPS,DE6600,0E,-C ; Model: 5600			$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	1 $	14,120.00 $	4,377.20 $	9,742.80	Included	Included
19.23	E-X5860A-00-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,DPS,U,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1 $	$ -	$ -	$ -	Included	Included
19.24	E5600-R6	E5600-R6			$5.31	69.0%	$ 3.64	$ 1.64	6,000 $	31,680.00 $	9,120.80 $	22,559.20	Included	Included
19.25	OS-SANTRICITY-CAP1	OS ENABLE PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1 $	$ -	$ -	$ -	Included	Included
19.26	DOC-PFK-E-S1RFS-0E-	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$23,631.00	69.0%	$ 14,919.59	$ 6,705.61	2 $	43,262.00 $	13,411.22 $	29,850.78	Included	Included
19.27	E5600A-A4K60-0E-C	E5600A,4K60 CONTROLLER,NO HIC,0E,-C ; Model: 5600			$408.00	69.0%	$ 281.52	$ 126.48	2 $	816.00 $	252.96 $	563.04	Included	Included
19.28	X-44659-00-0E-C	BATTERY,E5600,E5500,E5600,0E,-C ; Model: 5600			$2,155.00	69.0%	$ 1,485.57	$ 667.43	2 $	4,306.00 $	1,334.86 $	2,971.14	Included	Included
19.29	X-56014-00-0E-C	HIC,E5600-4.8.GB,16GB FC,4-PORTS,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 174.00	8 $	3,200.00 $	992.00 $	2,208.00	Included	Included
19.30	X-48435-00-0E-R6-C	SFP,10GB 8GSR/16GB FC,UNIFIRED,E-SERIES,0E,-C ; Model: 5600			$400.00	69.0%	$ 276.00	$ 174.00	2 $	150.00 $	46.50 $	103.50	Included	Included
19.31	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	2 $	150.00 $	46.50 $	103.50	Included	Included
19.32	DOC-E-5600A-00-0E-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1 $	$ -	$ -	$ -	Included	Included
19.33	SW-5600-FDE-SDM-0E	SW,FDE SEC KEY MGMT,5600,0E,-F ; Model: 5600			$186.00	69.0%	$ 128.34	$ 57.66	2 $	186.00 $	57.88 $	124.34	Included	Included
19.34	SW-5600-FDE-SDM-0E	SW,FDE SEC KEY MGMT,5600,0E,-F ; Model: 5600			$3,710.00	69.0%	$ 1,876.80	$ 843.20	1 $	2,720.00 $	843.20 $	1,876.80	Included	Included
19.35	CS-02-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 56C			$63,540.60	69.0%	$ 43,877.56	$ 19,733.12	1 $	63,590.69 $	19,715.11 $	43,477.58	Included	Included
19.36	E-X4121A-0E-C	DISK DRV,10TB,7.2K,DPS,DE6600,0E,-C ; Model: 5600			$1,580.00	69.0%	$ 1,090.20	$ 489.80	180 $	284,400.00 $	83,364.00 $	196,238.00	Included	Included
19.37	E-X5860A-0N-00-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,DRA,0E,-C ; Model: 5600			$44,120.00	69.0%	$ 9,742.80	$ 4,377.20	3 $	42,360.00 $	19,131.60 $	29,228.40	Included	Included
19.38	E5600-EXP-R6	15600-EXP-R6			$0.00	0.0%	$ -	$ -	1 $	$ -	$ -	$ -	Included	Included
19.39	OS-SANTRICITY1-CAP1	OS ENABLE,PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$5.31	69.0%	$ 3.64	$ 1.64	18,000 $	95,040.00 $	29,462.40 $	5,279.50	Included	Included
19.40	E-X3060A-0E-M4-C	EXA58B-2,0E,-C ; Model: 5600			$780.00	69.0%	$ 538.20	$ 241.80	6 $	4,680.00 $	1,450.80 $	3,229.20	Included	Included
19.41	X-2000A-00-0E-R6-C	CABLE,MINISAS,3M,0E,-C ; Model: 5600			$75.00	69.0%	$ 51.75	$ 23.25	6 $	450.00 $	139.50 $	310.50	Included	Included
19.42	X-50E13-00-0E-C	POWER CORD,IN CABINET,21AC,14-C19,DE6600,0E,-F ; Model: 5600			$146.00	69.0%	$ 128.34	$ 57.66	3 $	550.00 $	172.98 $	345.07	Included	Included
19.43	CS-01-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model: 56C			$43,924.78	69.0%	$ 30,308.10	$ 13,616.64	3 $	131,774.34 $	40,150.05 $	90,952.29	Included	Included
19.44	XEES6-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC,LC,0F ; Model: 5600			$150.00	69.0%	$ 103.50	$ 46.50	8 $	1,200.00 $	372.00 $	828.00	Included	Included
19.45	X6562-R6	CABLE,ETHERNET,5M R,MS CAT6 ; Model: 5600			$13.00	69.0%	$ 8.97	$ 4.03	6 $	78.00 $	8.06 $	17.94	Included	Included
	-add additional rows as necessary-													

Table 20
Professional Services for Phase II High
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move bits and train city staff for Phase II High.

Table 20 Totals
$ 44,750.00 $ 42,084.30

Item	Part Number	Part Description	List Price Per Hour	Discount Percentage	Discount off of unit price list price ($)	Net or bid unit price each (e-g)	Number of Hours Required	Extended list price (e*f)	extended net price (h*i)	line item discount (j-k)
20.00	CONSERVICES	Planning and Design	$ 350.00	10%	$ 35.00	$ 315.00	40 $	14,000.00 $	12,600.00 $	1,400.00
20.01	CONSERVICES	Installation and configuration Service	$ 350.00	10%	$ 35.00	$ 315.00	75 $	26,250.00 $	23,625.00 $	2,625.00
20.02	CONSERVICES	Project Management	$ 210.00	10%	$ 21.00	$ 189.00	31 $	6,510.00 $	5,859.00 $	651.00
XX.ER	xxx-xxx-xxxx				$ -	$ -		$ -	$ -	$ -
XX.ER	xxx-xxx-xxxx				$ -	$ -		$ -	$ -	$ -
	-add additional rows as necessary-									

Our proposal includes 5YR of Support/Maintenance on all the hardware because the best value to the City of Columbus is to procure that up front.
You could procure these systems with just 1 year of support up front but the annual renewal costs are prohibitive compared with buying multiple years up front.
Below are samples of what those additional support costs would look like if you don't buy with 5yrs upfront.

Annual Support - If bought with 1yr support

	Annual List Price For On-Site Maintenance and/or Support For This Item					Bid Price For On-Site Maintenance and/or Support For This Item				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Phase A Low - Tier 1	Included	$ 32,996.12	$ 32,996.12	$ 58,141.94	$ 58,141.94	Included	$ 29,696.51	$ 29,696.51	$ 52,327.75	$ 52,327.75
Phase A Low - Tier 3	Included	$ 49,449.12	$ 49,449.12	$ 84,690.84	$ 84,690.84	Included	$ 44,504.21	$ 44,504.21	$ 76,221.76	$ 76,221.76
Phase B Low - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B Low - Tier 3	Included	$ 49,449.12	$ 49,449.12	$ 84,690.84	$ 84,690.84	Included	$ 44,504.21	$ 44,504.21	$ 76,221.76	$ 76,221.76
Phase A High - Tier 1	Included	$ 32,996.12	$ 32,996.12	$ 58,141.94	$ 58,141.94	Included	$ 29,696.51	$ 29,696.51	$ 52,327.75	$ 52,327.75
Phase A High - Tier 3	Included	$148,347.36	$148,347.36	$ 254,072.52	$ 254,072.52	Included	$ 133,512.62	$ 133,512.62	$ 228,665.27	$ 228,665.27
Phase B High - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B High - Tier 3	Included	$148,347.36	$148,347.36	$ 254,072.52	$ 254,072.52	Included	$ 133,512.62	$ 133,512.62	$ 228,665.27	$ 228,665.27

Annual Support - If bought with 3yr support

	Annual List Price For On-Site Maintenance and/or Support For This Item					Bid Price For On-Site Maintenance and/or Support For This Item				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Phase A Low - Tier 1	Included	Included	Included	$ 58,141.94	$ 58,141.94	Included	Included	Included	$ 52,327.75	$ 52,327.75
Phase A Low - Tier 3	Included	Included	Included	$ 84,690.84	$ 84,690.84	Included	Included	Included	$ 76,221.76	$ 76,221.76
Phase B Low - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B Low - Tier 3	Included	Included	Included	$ 84,690.84	$ 84,690.84	Included	Included	Included	$ 76,221.76	$ 76,221.76
Phase A High - Tier 1	Included	Included	Included	$ 58,141.94	$ 58,141.94	Included	Included	Included	$ 52,327.75	$ 52,327.75
Phase A High - Tier 3	Included	Included	Included	$ 254,072.52	$ 254,072.52	Included	Included	Included	$ 228,665.27	$ 228,665.27
Phase B High - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B High - Tier 3	Included	Included	Included	$ 254,072.52	$ 254,072.52	Included	Included	Included	$ 228,665.27	$ 228,665.27

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

Company Name CDW Government LLC
Company Contact Name Nick Geiser
Contact Phone Number 614.318.9058
Contact E-mail Address nickgei@cdwg.com

Please complete the required pricing for the Phase A and B low and high pricing estimates
Each tab includes a main area for the baseline configuration and additional space for incremental storage
Each tab also includes an area for professional services for installation, configuration and training
Sample data provided herein is for illustrative purposes only and should be replaced with actual data
Additional rows may be added by the bidder; HOWEVER, please change the formula for the table totals or sum columns j and k and insert in the table totals above

As mentioned in our narrative, we have put together two possible NetApp hardware solutions. Accordingly, you will find two fully detailed pricing worksheets to show the cost differences.

There is a large amount of information as a part of the pricing worksheets so we wanted to highlight some important notes regarding our worksheets.

We tried as best as possible to follow the format but are happy to answer any questions you may have.

1. Our Tier 1 solution immediately exceeds your Phase A and B expectations, which will result in less complexity and is more cost efficient over time. As such, there is no need to add more controllers or capacity over time and we left Phase B blank to show that.

2. In some cases, like the Tier 3 storage addition in Phase B Low estimation our offering provide more than enough because it's the most efficient and cost effective.

3. We built all solutions to come with five years of support up front. Again, this is the most cost effective way to procure NetApp support.

4. In case you would like to see the option of procuring 1yr or 3yr support up front and subsequently the annual costs to support the hardware, we have added a fifth Tab called "Support Options".

5. All Professional Services estimates are based solely on our hardware builds and do not take into account any current environmental or resource considerations from City of Columbus.

6. We require a final design discussion and review with the City of Columbus after which we can provide a formal Statement of Work describing the formal scope, deliverables and terms/conditions.

7. CDW is proposing a Migration Workshop were we can develop a migration plan for the City of Columbus based on best practices. Most customers prefer to use their own resources to actually migrate their data on their own schedules.

8. We can offer our migration resources if you would like to leverage our team. CDW can provide a Migration worksheet to properly scope those additional resources.

9. We are proposing that the City of Columbus utilize NetApp training courses to get formal best practices along with any over the shoulder training from the CDW implementation. We have included credits for (3) 5 Day courses in each Phase A.

Bidder's Summary For Phase A and B Estimates

Phase A Low

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	65.00TB*	$ 746,574.97	$ 290,177.97
Tier 3 Storage	2,460.00TB	$ 1,110,378.59	$ 383,080.61
Phase A Professional Services****		$ 58,230.00	$ 52,407.00

Phase B Low

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	**	$ -	$ -
Tier 3 Storage	***	$ -	$ -
Phase B Professional Services		$ -	$ -

Phase A High

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	65.00TB*	$ 746,574.97	$ 290,177.97
Tier 3 Storage	4,920TB	$ 2,220,757.18	$ 766,161.23
Phase A Professional Services****		$ 85,950.00	$ 77,355.00

Phase B High

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	**	$ -	$ -
Tier 3 Storage	7,401TB	$ 3,331,135.77	$ 1,149,241.84
Phase B Professional Services		$ 58,660.00	$ 52,794.00

Ranges:

	LOW	HIGH
PHASE A	$ 725,665.58	$ 1,133,694.19
PHASE B	$ -	$ 1,202,035.84

* Initial outlay of 65TB is exceeds your Phase A and B requests, however we believe this results in least complexity and lowest cost over time

** Since the initial outlay of 65TB exceeds your total requests, we wanted to show that there is no need to add controllers and capacity in Phase B

*** Since the initial outlay of 2.46PB exceeds your total requests for the Low Estimates, we wanted to show that there is no need to add controllers and capacity

**** Phase A Services included both a Migration Workshop and Training for 3 People for 1 Week Each. The Migration will plan out the Migration using best practices however City of Columbus will handle migrations. This is normal for most customers but if you would like CDWG to handle the migrations then we would need to more information to properly scope.

Phase A Low Estimate
For Calendar Year 2017

Table 1 Baseline configuration for Tier 1 Low Estimate
Use the worksheet below to described required hardware, software and licensing components for Phase A and useable storage of: 65.00TB*   TB

								Table 1 Totals			
								$ 746,574.97	$ 290,177.97		

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e=g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All
1.00	NetApp AFF-8040	91.20	65.00										
1.01 SW-2-CL-BASE	SW-2,BASE,CL,NODE ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
1.02 AFF8040-R6	AFF8040-R6			$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
1.03 DS224C-AF-3.8-24N	DISID SHLF,AFF,12G,24X3.8TB,NSE,0P,-C ; Model: 5600			$259,435.00	73.5%	$ 190,684.73	$ 68,750.28	1	$ 259,435.00	$ 68,750.28	190,684.73	Included	Included
1.04 AFF8040A-001-R6	AFF8040 HA SYSTEM ; Model: AFF8040A			$8,600.00	73.5%	$ 6,321.00	$ 2,279.00	2	$ 17,200.00	$ 4,558.00	12,642.00	Included	Included
1.05 X6227-R6-C	CHASSIS,FAS8040/60/80 W/CNTRL,SLOTS,AC PS,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
1.06 X6527-R6-C	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP,-C ; Model: AFF8040A			$150.00	73.5%	$ 110.25	$ 39.75	8	$ 1,700.00	$ 318.00	882.00	Included	Included
1.07 X6566B-2-R6-C	CABLE,DIRECT ATTACH CU STP+ 10G,2M,-C ; Model: AFF8040A			$80.00	10.0%	$ 8.00	$ 72.00	4	$ 370.00	$ 288.00	32.00	Included	Included
1.08 X66021A-R6-C	CABLE,STORAGE,MINISAS HD,QSFP,12G,2M,-C ; Model: AFF8040A			$125.00	73.5%	$ 91.88	$ 33.13	3	$ 500.00	$ 132.50	367.50	Included	Included
1.09 ALL-FLASH-OPTIMIZE	OPTIMIZED SSD PERSONALITY ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
1.10 NAS-OPTIMIZED	OPTIMIZED NAS PERSONALITY ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
1.11 X6599A-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS8000,-C ; Model: AFF8040A			$795.00	73.5%	$ 584.33	$ 210.68	8	$ 6,360.00	$ 1,685.40	4,674.60	Included	Included
1.12 X-07659-00-C	RAIL KIT,4-POST,RND/SQ-HOLE,ADJ,24-37,-C ; Model: AFF8040A			$115.00	73.5%	$ 84.53	$ 30.48	2	$ 230.00	$ 60.95	169.05	Included	Included
1.13 DOC-AFF8040-C	DOCUMENTS,AFF8040,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
1.14 X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	4	$ -	$ -	-	Included	Included
1.15 SW-2-8040A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,8040A,-C ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	2	$ -	$ -	-	Included	Included
1.16 DATA-AT-REST-ENCR	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: AFF8040A			$0.00	0.0%	$ -	$ -	7	$ -	$ -	-	Included	Included
1.17 SW-FLASH-BUNDL-N5W	FLASHBUNDLE,PER-0.1TB,NCAP,ULTPERF,-C ; Model: AFF8040A			$367.28	73.5%	$ 269.95	$ 97.33	917	$ 334,959.36	$ 88,764.73	246,195.13	Included	Included
1.18 CS-INSTALL-AFF	BASE INSTALLATION, ALL FLASH FAS SYSTEM ; Model: AFF8040A			$5,000.00	15.0%	$ 750.00	$ 4,250.00	1	$ 5,000.00	$ 4,250.00	750.00	Included	Included
1.19 CS-O2-4HR-VA	SUPPORTEDGE PREMIUM 4HR ONSITE,VA Service Months: 60.0; Service Start Date: 2/22/2017; N			$121,370.61		$ -	$ 121,370.61	1	$ 121,370.61	$ 121,370.61	-	Included	Included
	-add additional rows as necessary-												

Table 2
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage via scale-out incrementally, add additional rows as necessary

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e=g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All
2.00 xxx-xxx-xxxx	Additional Flash Storage Unnecessary - 65TB built in up front					$ -	$ -	1	$ -	$ -	-		
	-add additional rows as necessary-												

Table 3 Baseline configuration for Tier 3 Low Estimate
Use the worksheet below to described required hardware, software and licensing components for Phase A and useable storage of: 2,460.00TB   TB

								Table 3 Totals			
								$ 1,110,378.59	$ 383,080.61		

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e=g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All
3.00	NetApp E5660	3,800TB	2,467TB										
3.01 E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5%	$ 1,034.90	$ 545.10	30	$ 47,400.00	$ 16,353.00	31,047.00	Included	Included
3.02 E-X5660A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600			$14,120.00	65.5%	$ 9,248.60	$ 4,871.40	1	$ 14,120.00	$ 4,871.40	9,248.60	Included	Included
3.03 E5600-R6	E5600-R6			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
3.04 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5%	$ 3.46	$ 1.82	3,000	$ 15,840.00	$ 5,464.80	10,375.20	Included	Included
3.05 DOC-PFK-E-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
3.06 E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$21,631.00	65.5%	$ 14,168.31	$ 7,462.70	2	$ 43,262.00	$ 14,925.39	28,336.61	Included	Included
3.07 X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600			$408.00	65.5%	$ 267.24	$ 140.76	2	$ 816.00	$ 281.52	534.48	Included	Included
3.08 X-56019-00-0E-C	HIC,E5600-48GB,10GB iSCSI,4-PORTS,0E,-C ; Model: 5600			$2,153.00	65.5%	$ 1,410.22	$ 742.79	2	$ 4,306.00	$ 1,485.57	2,820.43	Included	Included
3.09 X-48895-00-0E-R6-C	SFP,10GB iSCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600			$400.00	65.5%	$ 262.00	$ 138.00	8	$ 3,200.00	$ 1,104.00	2,096.00	Included	Included
3.10 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	65.5%	$ 49.13	$ 25.88	2	$ 150.00	$ 51.75	98.25	Included	Included
3.11 DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
3.12 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	65.5%	$ 121.83	$ 64.17	1	$ 186.00	$ 64.17	121.83	Included	Included
3.13 SW-5600-FDE-SKM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600			$2,770.00	65.5%	$ 1,781.60	$ 938.40	1	$ 2,770.00	$ 938.40	1,781.60	Included	Included
3.14 CS-O2-4HR	SUPPORTEDGT PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Mod-			$45,048.69	65.5%	$ 29,506.89	$ 15,541.80	1	$ 45,048.69	$ 15,541.80	29,506.89	Included	Included
3.15 E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5%	$ 1,034.90	$ 545.10	300	$ 474,000.00	$ 163,530.00	310,470.00	Included	Included
3.16 E-X5660A-DM-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,DM,0E,-C ; Model: 5600			$14,120.00	65.5%	$ 9,248.60	$ 4,871.40	5	$ 70,600.00	$ 24,357.00	46,243.00	Included	Included
3.17 E5600-EXP-R6	E5600-EXP-R6			$0.00	0.0%	$ -	$ -	5	$ -	$ -	-	Included	Included
3.18 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5%	$ 3.46	$ 1.82	30,000	$ 158,400.00	$ 54,648.00	103,752.00	Included	Included
3.19 E-X30030A-0E-R6-C	ESM,5BB-2,0E,-C ; Model: 5600			$780.00	65.5%	$ 510.90	$ 269.10	10	$ 7,800.00	$ 2,691.00	5,109.00	Included	Included
3.20 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	65.5%	$ 49.13	$ 25.88	10	$ 750.00	$ 258.75	491.25	Included	Included
3.21 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	65.5%	$ 121.83	$ 64.17	5	$ 930.00	$ 320.85	609.15	Included	Included
3.22 CS-O2-4HR	SUPPORTEDGT PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Mod-			$43,924.78	65.5%	$ 28,770.73	$ 15,154.05	5	$ 219,623.90	$ 75,770.25	143,853.65	Included	Included
3.23 X6536-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP ; Model: 5600			$150.00	65.5%	$ 98.25	$ 51.75	8	$ 1,200.00	$ 414.00	786.00	Included	Included
3.24 X6567-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600			$13.00	65.5%	$ 8.52	$ 4.49	2	$ 26.00	$ 8.97	17.03	Included	Included
3.25						$ -	$ -		$ -	$ -	-		
	-add additional rows as necessary-												

Table 4
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e=g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item — Years 1-5 All
4.00	NetApp E5660 - 1 Brick	3,800TB	2,467TB										
4.01 E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5%	$ 1,034.90	$ 545.10	30	$ 47,400.00	$ 16,353.00	31,047.00	Included	Included
4.02 E-X5660A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600			$14,120.00	65.5%	$ 9,248.60	$ 4,871.40	1	$ 14,120.00	$ 4,871.40	9,248.60	Included	Included
4.03 E5600-R6	E5600-R6			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
4.04 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5%	$ 3.46	$ 1.82	3,000	$ 15,840.00	$ 5,464.80	10,375.20	Included	Included
4.05 DOC-PFK-E-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
4.06 E5600A-48GB-0E-C	E5600A,48GB CONTROL,IF,NO HIC,0E,-C ; Model: 5600			$21,631.00	65.5%	$ 14,168.31	$ 7,462.70	2	$ 43,262.00	$ 14,925.39	28,336.61	Included	Included
4.07 X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600			$408.00	65.5%	$ 267.24	$ 140.76	2	$ 816.00	$ 281.52	534.48	Included	Included
4.08 X-56019-00-0E-C	HIC,E5600-48GB,10GB iSCSI,4-PORTS,0E,-C ; Model: 5600			$2,153.00	65.5%	$ 1,410.27	$ 742.79	2	$ 4,306.00	$ 1,485.57	2,820.43	Included	Included
4.09 X-48895-00-0E-R6-C	SFP,10GB iSCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600			$400.00	65.5%	$ 262.00	$ 138.00	8	$ 3,200.00	$ 1,104.00	2,096.00	Included	Included
4.10 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
4.11 DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$186.00	65.5%	$ 121.83	$ 64.17	1	$ 186.00	$ 64.17	121.83	Included	Included
4.12 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$2,770.00	65.5%	$ 1,781.60	$ 938.40	1	$ 2,720.00	$ 938.40	29,506.89	Included	Included
4.13 SW-5600-FDE-SKM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600			$45,048.69	65.5%	$ 29,506.89	$ 15,541.80	1	$ 45,048.69	$ 15,541.80	29,506.89	Included	Included
4.14 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Mod-			$1,580.00	65.5%	$ 1,034.90	$ 545.10	300	$ 474,000.00	$ 163,530.00	310,470.00	Included	Included
4.15 E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$14,120.00	65.5%	$ 9,248.60	$ 4,871.40	5	$ 70,600.00	$ 24,357.00	46,243.00	Included	Included
4.16 E-X5660A-DM-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,DM,0E,-C ; Model: 5600			$0.00	0.0%	$ -	$ -	5	$ -	$ -	-	Included	Included
4.17 E5600-EXP-R6	E5600-EXP-R6			$5.28	65.5%	$ 3.46	$ 1.82	30,000	$ 158,400.00	$ 54,648.00	103,752.00	Included	Included
4.18 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600			$780.00	65.5%	$ 510.90	$ 269.10	10	$ 7,800.00	$ 2,691.00	5,109.00	Included	Included
4.19 E-X30030A-0E-R6-C	ESM,5BB-2,0E,-C ; Model: 5600			$75.00	65.5%	$ 49.13	$ 25.88	10	$ 750.00	$ 258.75	491.25	Included	Included
4.20 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$186.00	65.5%	$ 121.83	$ 64.17	5	$ 930.00	$ 320.85	609.15	Included	Included
4.21 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$43,924.78	65.5%	$ 28,770.73	$ 15,154.05	5	$ 219,623.90	$ 75,770.25	143,853.65	Included	Included
4.22 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Mod-			$150.00	65.5%	$ 98.25	$ 51.75	8	$ 1,200.00	$ 414.00	786.00	Included	Included
4.23 X6536-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP ; Model: 5600			$13.00	65.5%	$ 8.52	$ 4.49	2	$ 26.00	$ 8.97	17.03	Included	Included
4.24 X6567-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600												
	-add additional rows as necessary-												

Table 5
Professional Services for Phase A Low
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move files and train city staff for Phase A Low

								Table 5 Totals		
								$ 58,230.00	$ 52,407.00	

Item Part Number	Part Description				List Price Per Hour	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e=g)	Number of Hours Required	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)
5.00 CDWSERVICES	Planning and Design				$ 350.00	10%	$ 35.00	$ 315.00	40	$ 14,000.00	$ 12,600.00	1,400.00
5.01 CDWSERVICES	Installation and configuration service				$ 350.00	10%	$ 35.00	$ 315.00	34	$ 11,900.00	$ 10,710.00	1,190.00
5.02 CDWSERVICES	Migration Workshop*				$ 350.00	10%	$ 35.00	$ 315.00	40	$ 14,000.00	$ 12,600.00	1,400.00
5.03 ED-TU-1-ZA	NetApp Training Courses - 3 People, 5 Days				$ 75.00	10%	$ 7.50	$ 67.50	180	$ 13,500.00	$ 12,150.00	1,350.00
5.04 CDWSERVICES	Project Management				$ 210.00	10%	$ 21.00	$ 189.00	23	$ 4,830.00	$ 4,347.00	483.00
5.05 xxx-xxx-xxxx					$ -		$ -	$ -		$ -	$ -	-
	-add additional rows as necessary-											

Phase II Low Estimate
For Calendar Year 2018

Table 6 Baseline configuration for Tier 1 Low Estimate
Use the worksheet below to describe required hardware, software, and licensing components for Phase II and host usable storage of:

				Table 6 Total	

**   **   TB $ | $

| | | | Useable | | Discount | Discount off of | Net or bid unit | | Extended list | extended net | line item |
Item	Part Number	Part Description	Size in TB Storage in TB	List Price	Percentage	list price [$]	price each [e·g]	Quantity	price [c*f]	price [h*f]	discount [j·k]
6.00		Existing NetApp AFF 8040 Item I Note A									
6.01				$			$	$	$	$	
6.02		Since the initial entry of 35TB exceeds your total requests, we wanted to show that there is no need to add controllers and		$			$	$	$	$	
6.03		Capacity in Phase II		$			$	$	$	$	
6.04				$			$	$	$	$	
6.05				$			$	$	$	$	
6.06				$			$	$	$	$	
6.07				$			$	$	$	$	
6.08				$			$	$	$	$	
6.09				$			$	$	$	$	
6.11				$			$	$	$	$	
6.12				$			$	$	$	$	
6.13				$			$	$	$	$	
6.14				$			$	$	$	$	
6.15				$			$	$	$	$	
6.17				$			$	$	$	$	
6.18											
6.19											
6.20	xxx-xxx-xxxx								$	$	$
6.21	xxx-xxx-xxxx								$	$	$
6.22	xxx-xxx-xxxx								$	$	$
6.23	xxx-xxx-xxxx								$	$	$
6.24	xxx-xxx-xxxx								$	$	$
6.25	xxx-xxx-xxxx								$	$	$

add additional rows as necessary

Table 7
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage via table-out incrementally, add additional rows as necessary

										Annual List Price For On-Site Maintenance and/or Support for This Item	list Price For On-Site Maintenance and/or Support For This Item
										Years 1-5 All	Years 1-5 All

| | | | Useable | | Discount | Discount off of | Net or bid unit | | Extended list | extended net | line item |
Item	Part Number	Part Description	Size in TB Storage in TB	List Price	Percentage	list price [$]	price each [e·g]	Quantity	price [c*f]	price [h*f]	discount [j·k]
7.00	xxx-xxx-xxxx	Additional Flash Storage Unnecessary - 65TB built-in yet front		$		$	$	1	$	$	
7.01	xxx-xxx-xxxx			$		$	$	1	$	$	
7.02	xxx-xxx-xxxx			$		$	$	1	$	$	
7.03	xxx-xxx-xxxx			$		$	$	1	$	$	
7.04	xxx-xxx-xxxx			$		$	$	1	$	$	
7.05	xxx-xxx-xxxx			$		$	$	1	$	$	

add additional rows as necessary

Table 8 Baseline configuration for Tier II Low Estimate
Use the worksheet below to describe required hardware, software and licensing components for Phase II and usable storage of:

***			TB		Table 8 Totals	

										Annual List Price For On-Site Maintenance and/or Support for This Item	Bid Price For On-Site Maintenance and/or Support For This Item
										Years 1-5 All	Years 1-5 All

| | | | Useable | | Discount | Discount off of | Net or bid unit | | Extended list | extended net | line item |
Item	Part Number	Part Description	Size in TB Storage in TB	List Price	Percentage	list price [$]	price each [e·g]	Quantity	price [c*f]	price [h*f]	discount [j·k]
8.00		Existing NetApp E5600 Slick Item Phase A									
8.01		Since the initial outlay of 2.4PB exceeds your total requests for the Low Estimate, we wanted to show that there is no need to							$	$	$
8.02		add controllers and capacity							$	$	$
8.03									$	$	$
8.04									$	$	$
8.05									$	$	$
xREF1	xxx-xxx-xxxx								$	$	$
xREF1	xxx-xxx-xxxx								$	$	$
xREF1	xxx-xxx-xxxx								$	$	$
xREF1	xxx-xxx-xxxx								$	$	$

add additional rows as necessary

Table 9
Incremental Storage for Tier II purchased after baseline configuration above
In the table below, provide additional production information for adding Tier II storage via table-out incrementally, add additional rows as necessary

										Annual List Price For On-Site Maintenance and/or Support for This Item	Bid Price For On-Site Maintenance and/or Support For This Item
										Years 1-5 All	Years 1-5 All

| | | | Useable | | Discount | Discount off of | Net or bid unit | | Extended list | extended net | line item |
Item	Part Number	Part Description	Size in TB Storage in TB	List Price	Percentage	list price [$]	price each [e·g]	Quantity	price [c*f]	price [h*f]	discount [j·k]
9.00		Existing NetApp E5600 Slick Item Phase A									
9.01		Since the initial outlay of 2.4PB exceeds your total requests for the Low Estimate, we wanted to show that there is no need to					$	$	$	$	
9.02		add controllers and capacity					$	$	$	$	
9.03							$	$	$	$	
9.04							$	$	$	$	
9.05							$	$	$	$	

add additional rows as necessary

Table 10
Professional Services for Phase II Low
In the table below, provide information regarding the proposed statement of work and hourly rate to design, configure, install, move files and train city and/or for Phase II Low

							Number of			
									Table 10 Totals	
									$	

| | | | Discount | Discount off of | Net or bid unit | | Number of Hours | Extended list | extended net | line item |
Item	Part Number	Part Description	List Price Per Hour	Percentage	list price [$]	price each [e·g]	Required	price [c*f]	price [h*f]	discount [j·k]
10.00		Per previous description, Phase A Low TB to be also exceeds needs for Phase II Low so services is unnecessary				$		$	$	$
10.01						$		$	$	$
10.02						$		$	$	$
10.03						$		$	$	$
10.04						$		$	$	$
10.05						$		$	$	$

add additional rows as necessary

Phase A High Estimate
For Calendar Year 2017

Table 11 Baseline configuration for Tier 1 High Estimate
Use the worksheet below to described required hardware, software and licensing for Phase A and useable storage of:

65.00TB^ TB

Table 11 Totals
$ 746,574.97 | $ 290,177.97

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support For This Item
												Years 1-5 All	Years 1-5 All
11.00	NetApp AFF A040	91.20	65.00										
11.01 SW-2-CL-BASE	SW-2,BASE,CL,NODE-; Model: AFF8040A			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
11.02 AFF8040-R6	AFF8040-R6			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
11.03 DS224C-AF-3-6-24N	DISGD SHLF,AFF,12G,24G,8TB,NSE,0E,-C; Model: AFF8040A			$259,435.00	73.5% $	190,684.75 $	68,750.28	1 $	259,435.00 $	68,750.28 $	190,684.73	Included	Included
11.04 AFF8040A-001-R6	AFF8040 HA SYSTEM ; Model: AFF8040A			$8,600.00	73.5% $	6,321.00 $	2,279.00	2 $	17,200.00 $	4,558.00 $	12,642.00	Included	Included
11.05 X6227-R6-C	CHASSIS,FAS8040/60/60 W/CNTRL SLOTS,AC PS,-C; Model: AFF8040A			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
11.06 X6536-R6-C	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP,-C; Model: AFF8040A			$150.00	73.5% $	110.25 $	39.75	8 $	1,200.00 $	318.00 $	882.00	Included	Included
11.07 X6566B-2-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,2M,-C; Model: AFF8040A			$80.00	10.0% $	8.00 $	72.00	4 $	320.00 $	288.00 $	32.00	Included	Included
11.08 X66021A-R6-C	CABLE,STORAGE,MINISAS HD,QSFP,120,2M,-C; Model: AFF8040A			$125.00	73.5% $	91.88 $	33.13	4 $	500.00 $	132.50 $	367.50	Included	Included
11.09 ALL-FLASH-OPTIMIZED	OPTIMIZED OPTIMIZED SSD PERSONALITY ; Model: AFF8040A			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
11.10 NAS-OPTIMIZED	OPTIMIZED NAS PERSONALITY ; Model: AFF8040A			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
11.11 X6599A-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS80X0,-C ; Model: AFF8040A			$795.00	73.5% $	584.33 $	210.68	8 $	6,360.00 $	1,685.40 $	4,674.60	Included	Included
11.12 X-02659-00-C	RAIL KIT,4-POST,RND/SQ-HOLE,ADJ,24-32,-C ; Model: AFF8040A			$115.00	73.5% $	84.53 $	30.48	2 $	230.00 $	60.95 $	169.05	Included	Included
11.13 DOC-AFF8040-C	DOCUMENTS,AFF8040,-C ; Model: AFF8040A			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
11.14 X800-42U-R6-C	POWER CABLE,IN-CABINET,C13-C14,-C; Model: AFF8040A			$0.00	0.0% $	- $	-	4 $	- $	- $	-	Included	Included
11.15 SW-2-8040A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,8040A,-C ; Model: AFF8040A			$0.00	0.0% $	- $	-	2 $	- $	- $	-	Included	Included
11.16 DATA-AT-REST-ENCRYPT	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: AFF8040A			$0.00	0.0% $	- $	-	2 $	- $	- $	-	Included	Included
11.17 SW-FLASH-BUNDLE-HI	SW,FLASH-BUNDLE,PER-0.1TB,HCAP,ULTPERF,-C ; Model: AFF8040A			$367.28	73.5% $	269.95 $	97.33	912 $	334,959.36 $	88,764.33 $	246,195.13	Included	Included
11.18 CS-INSTALL-AFF	BASE INSTALLATION, ALL FLASH FAS SYSTEM ; Model: AFF8040A			$5,000.00	15.0% $	750.00 $	4,250.00	1 $	5,000.00 $	4,250.00 $	750.00	Included	Included
11.19 CS-O2-4HR-VA	SUPPORTEDGE PREMIUM 4HR ONSITE,VA Service Months: 60.0; Service Start Date: 2/22/2017; Model: AFF8040A			$121,370.61		$ - $	121,370.61	1 $	121,370.61 $	121,370.61 $	-	Included	Included
11.20 xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included

-add additional rows as necessary-

Table 12
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage via scale-out incrementally, add additional rows as necessary

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support For This Item
												Years 1-5 All	Years 1-5 All
12.00 xxx-xxx-xxxx	Additional Flash Storage Unnecessary - 65TB built in up front				$	- $	-	1 $	- $	- $	-		

-add additional rows as necessary-

Table 13 Baseline configuration for Tier 3 Low Estimate
Use the worksheet below to described required hardware, software and licensing for Phase A and useable storage of:

4,920TB TB

Table 13 Totals
$ 2,220,757.18 | $ 766,361.25

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support For This Item
												Years 1-5 All	Years 1-5 All
13.00	NetApp 5600 - 28tsks	7,600TB	4,934TB										
13.01 X-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5% $	1,034.90 $	545.10	60 $	94,800.00 $	32,706.00 $	62,094.00	Included	Included
13.02 E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600			$14,120.00	65.5% $	9,248.60 $	4,871.40	2 $	28,240.00 $	9,742.80 $	18,497.20	Included	Included
13.03 E5600-R6	E5600-R6			$0.00	0.0% $	- $	-	2 $	- $	- $	-	Included	Included
13.04 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5% $	3.46 $	1.82	6,000 $	31,680.00 $	10,929.86 $	20,750.40	Included	Included
13.05 DOC-PFK-E-SERIES-0E-C	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$0.00	0.0% $	- $	-	2 $	- $	- $	-	Included	Included
13.06 E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$21,631.00	65.5% $	14,168.31 $	7,462.70	4 $	86,524.00 $	29,850.76 $	56,673.22	Included	Included
13.07 X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600			$408.00	65.5% $	267.24 $	140.76	4 $	1,632.00 $	563.04 $	1,068.96	Included	Included
13.08 X-56019-00-0E-C	HIC,E5600-48GB,10GB ISCSI,4-PORTS,0E,-C ; Model: 5600			$2,153.00	65.5% $	1,410.22 $	742.79	4 $	8,612.00 $	2,971.14 $	5,640.86	Included	Included
13.09 X-48495-00-0E-R6-C	SFP,10GB ISCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600			$400.00	65.5% $	262.00 $	138.00	16 $	6,400.00 $	2,208.00 $	4,192.00	Included	Included
13.10 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	65.5% $	49.13 $	25.88	4 $	300.00 $	103.50 $	196.50	Included	Included
13.11 DOC-L-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$0.00	0.0% $	- $	-	2 $	- $	- $	-	Included	Included
13.12 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	65.5% $	121.83 $	64.17	2 $	372.00 $	128.34 $	243.66	Included	Included
13.13 SW-5600-FDE-5KM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600			$2,720.00	65.5% $	1,781.60 $	938.40	2 $	5,440.00 $	1,876.80 $	3,563.20	Included	Included
13.14 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Model: 5600			$45,048.69	65.5% $	29,506.89 $	15,541.80	2 $	90,097.36 $	31,083.60 $	59,013.78	Included	Included
13.15 CS-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5% $	1,034.90 $	545.10	600 $	948,000.00 $	327,060.00 $	620,940.00	Included	Included
13.16 E-X5680A-DM-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,DM,0E,-C ; Model: 5600			$14,120.00	65.5% $	9,248.60 $	4,871.40	10 $	141,200.00 $	48,714.00 $	92,486.00	Included	Included
13.17 E5600-DXP-R6	E5600-DXP-R6			$0.00	0.0% $	- $	-	10 $	- $	- $	-	Included	Included
13.18 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5% $	3.46 $	1.82	60,000 $	316,800.00 $	109,296.60 $	207,504.00	Included	Included
13.19 E-X30030A-0E-R6-C	ESM,S8B-2,0E,-C ; Model: 5600			$780.00	65.5% $	510.90 $	269.10	20 $	15,600.00 $	5,382.00 $	10,218.00	Included	Included
13.20 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	65.5% $	49.13 $	25.88	20 $	1,500.00 $	517.50 $	982.50	Included	Included
13.21 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	65.5% $	121.83 $	64.17	10 $	1,860.00 $	641.70 $	1,218.30	Included	Included
13.22 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Model: 5600			$43,924.78	65.5% $	28,770.73 $	15,154.05	10 $	439,247.80 $	151,540.49 $	287,707.31	Included	Included
13.23 X6516-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP ; Model: 5600			$150.00	65.5% $	98.25 $	51.75	16 $	2,400.00 $	828.00 $	1,572.00	Included	Included
13.24 X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600			$13.00	65.5% $	8.52 $	4.49	4 $	52.00 $	17.94 $	34.06	Included	Included
#REF! xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included
#REF! xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included
#REF! xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included
#REF! xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included
#REF! xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included

-add additional rows as necessary-

Table 14
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item	Bid Price For On-Site Maintenance and/or Support For This Item
												Years 1-5 All	Years 1-5 All
14.00	NetApp 5600 - 28tsks												
14.01 E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5% $	1,034.90 $	545.10	30 $	47,400.00 $	16,353.00 $	31,047.00	Included	Included
14.02 E-X5680A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600			$14,120.00	65.5% $	9,248.60 $	4,871.40	1 $	14,120.00 $	4,871.40 $	9,248.60	Included	Included
14.03 E5600-R6	E5600-R6			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
14.04 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5% $	3.46 $	1.82	3,000 $	15,840.00 $	5,464.80 $	10,375.20	Included	Included
14.05 DOC-PFK-E-SERIES-0E-C	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
14.06 E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600			$21,631.00	65.5% $	14,168.31 $	7,462.70	2 $	43,262.00 $	14,925.39 $	28,336.61	Included	Included
14.07 X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600			$408.00	65.5% $	267.24 $	140.76	2 $	816.00 $	281.52 $	534.48	Included	Included
14.08 X-56019-00-0E-C	HIC,E5600-48GB,10GB ISCSI,4-PORTS,0E,-C ; Model: 5600			$2,153.00	65.5% $	1,410.22 $	742.79	2 $	4,306.00 $	1,485.57 $	2,820.43	Included	Included
14.09 X-48495-00-0E-R6-C	SFP,10GB ISCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600			$400.00	65.5% $	262.00 $	138.00	8 $	3,200.00 $	1,104.00 $	2,096.00	Included	Included
14.10 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	65.5% $	49.13 $	25.88	2 $	150.00 $	51.75 $	98.25	Included	Included
14.11 DOC-L-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600			$0.00	0.0% $	- $	-	1 $	- $	- $	-	Included	Included
14.12 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	65.5% $	121.83 $	64.17	1 $	186.00 $	64.17 $	121.83	Included	Included
14.13 SW-5600-FDE-5KM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600			$2,720.00	65.5% $	1,781.60 $	938.40	1 $	2,720.00 $	938.40 $	1,781.60	Included	Included
14.14 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Model: 5600			$45,048.69	65.5% $	29,506.89 $	15,541.80	1 $	45,048.69 $	15,541.80 $	29,506.89	Included	Included
14.15 E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600			$1,580.00	65.5% $	1,034.90 $	545.10	300 $	474,000.00 $	163,530.00 $	310,470.00	Included	Included
14.16 E-X5680A-DM-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,DM,0E,-C ; Model: 5600			$14,120.00	65.5% $	9,248.60 $	4,871.40	5 $	70,600.00 $	24,357.00 $	46,243.00	Included	Included
14.17 E5600-DXP-R6	E5600-DXP-R6			$0.00	0.0% $	- $	-	5 $	- $	- $	-	Included	Included
14.18 OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRCTY,CAP-STOR,0E,-C ; Model: 5600			$5.28	65.5% $	3.46 $	1.82	30,000 $	158,400.00 $	54,648.00 $	103,752.00	Included	Included
14.19 E-X30030A-0E-R6-C	ESM,S8B-2,0E,-C ; Model: 5600			$780.00	65.5% $	510.90 $	269.10	10 $	7,800.00 $	2,691.00 $	5,109.00	Included	Included
14.20 X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600			$75.00	65.5% $	49.13 $	25.88	10 $	750.00 $	258.75 $	491.25	Included	Included
14.21 X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600			$186.00	65.5% $	121.83 $	64.17	5 $	930.00 $	320.85 $	609.15	Included	Included
14.22 CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Model: 5600			$43,924.78	65.5% $	28,770.73 $	15,154.05	5 $	219,623.90 $	75,770.25 $	143,853.65	Included	Included
14.23 X6536-R6	CABLE,CNTLR-SHELF/SWITCH,5M,LC/LC,OP ; Model: 5600			$150.00	65.5% $	98.25 $	51.75	8 $	1,200.00 $	414.00 $	786.00	Included	Included
14.24 X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600			$13.00	65.5% $	8.52 $	4.49	2 $	26.00 $	8.97 $	17.03	Included	Included
14.05 xxx-xxx-xxxx					$	- $	-	$	- $	- $	-	Included	Included

-add additional rows as necessary-

Table 15
Professional Services for Phase A High
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move files and train city staff for Phase A High

Table 15 Totals
$ 85,950.00 | $ 77,355.00

Item Part Number	Part Description			List Price Per Hour	Discount Percentage	Discount off of list price ($)	Net or bid unit price each (e-g)	Number of Hours Required	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)
15.00 CDWSERVICES	Planning and Design			$ 350.00	10% $	35.00 $	315.00	40 $	14,000.00 $	12,600.00 $	1,400.00
15.01 CDWSERVICES	Installation and configuration service			$ 350.00	10% $	35.00 $	315.00	100 $	35,000.00 $	31,500.00 $	3,500.00
15.02 CDWSERVICES	Migration Workshop*			$ 350.00	10% $	35.00 $	315.00	40 $	14,000.00 $	12,600.00 $	1,400.00
15.03 ED-TLI-1-7A	NetApp Training Courses - 3 People, 5 Days			$ 75.00	10% $	7.50 $	67.50	180 $	13,500.00 $	12,150.00 $	1,350.00
15.04 CDWSERVICES	Project Management			$ 210.00	10% $	21.00 $	189.00	45 $	9,450.00 $	8,505.00 $	945.00
15.05 xxx-xxx-xxxx					$	- $	-	$	- $	- $	-

-add additional rows as necessary-
*Please see note on Summary tab regarding migration services

Phase B High Estimate
For Calendar Year 2016

Table 16 Baseline configuration for Tier 1 High Estimate
Use the worksheet below to described required hardware, software, and licensing for Phase B and useable storage of: ** TB

Table 16 Totals
$ -- $ --

	a	b	c	d Useable Storage in TB	e List Price	f Discount Percentage	g Discount off list price ($)	h Net or bid unit price each (e-g)	i Quantity	j Extended list price (e*i)	k extended net price (h*i)	l line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
Item Part Number		Part Description	Size in TB											
16.00		Existing NetApp AFF-8xxD from Phase A			$ -	$ -		$ -		$ -	$ -	-		
16.01					$ -	$ -		$ -	$ -	$ -				
16.02		Since the initial outlay of 65TB exceeds your total requests, we wanted to show that there is			$ -	$ -		$ -	$ -	$ -				
16.03		no need to add controllers and capacity in Phase B			$ -	$ -		$ -	$ -	$ -				
16.04					$ -	$ -		$ -	$ -	$ -				
#REF!	xxx-xxx-xxxx						$ -	$ -		$ -	$ -	$ -		
	-add additional rows as necessary-													

Table 17
Incremental Storage for Tier 1 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 1 storage via scale-out incrementally, add additional rows as necessary

	a	b	c	d Useable Storage in TB	e List Price	f Discount Percentage	g Discount off list price ($)	h Net or bid unit price each (e-g)	i Quantity	j Extended list price (e*i)	k extended net price (h*i)	l line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
Item Part Number		Part Description	Size in TB											
17.00	xxx-xxx-xxxx	Additional Flash Storage Unnecessary - 65TB built-in up front					$ -	$ -		$ -	$ -	-		
	-add additional rows as necessary-													

Table 18 Baseline configuration for Tier 3 High Estimate
Use the worksheet below to described required hardware, software and licensing for Phase B and useable storage of: 7,401TB TB

Table 18 Totals
$ 3,331,135.77 $ 1,149,741.84

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
18.00	NetApp 5560 - 3 Bricks	11,400TB	7,401TB										
18.01	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600		$1,580.00	66.5%	$ 1,034.90	$ 545.10	90	$ 142,200.00	$ 49,059.00	93,141.00	Included	Included
18.02	E-X5684A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600		$14,120.00	65.5%	$ 9,248.60	$ 4,871.40	3	$ 42,360.00	$ 14,614.20	27,745.40	Included	Included
18.03	E5600-R6			$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
18.04	OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600		$5.28	65.5%	$ 3.46	$ 1.82	9,000	$ 47,520.00	$ 16,394.40	31,125.60	Included	Included
18.05	DOC-PFK-E-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600		$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
18.06	E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600		$21,631.00	65.5%	$ 14,168.31	$ 7,462.70	6	$ 129,786.00	$ 44,776.17	85,009.83	Included	Included
18.07	X-48819-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600		$408.00	65.5%	$ 267.24	$ 140.76	6	$ 2,448.00	$ 844.56	1,603.44	Included	Included
18.08	X-56014-00-0E-C	HIC,E5600-48GB,10GB iSCSI,4-PORTS,0E,-C ; Model: 5600		$2,153.00	65.5%	$ 1,410.22	$ 742.79	6	$ 12,918.00	$ 4,456.71	8,461.29	Included	Included
18.09	X-48895-00-0E-R6-C	SFP,10GB iSCSI,16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600		$400.00	65.5%	$ 262.00	$ 138.00	24	$ 9,600.00	$ 3,312.00	6,288.00	Included	Included
18.10	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600		$75.00	65.5%	$ 49.13	$ 25.88	6	$ 450.00	$ 155.25	294.75	Included	Included
18.11	DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600		$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
18.12	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600		$186.00	65.5%	$ 121.83	$ 64.17	3	$ 558.00	$ 192.51	365.49	Included	Included
18.13	SW-5600-FDE-SKM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600		$2,720.00	65.5%	$ 1,781.60	$ 938.40	8	$ 8,160.00	$ 2,815.20	5,344.80	Included	Included
18.14	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Model:		$45,048.69	65.5%	$ 29,506.89	$ 15,541.80	3	$ 135,146.07	$ 46,625.39	88,520.68	Included	Included
18.15	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600		$1,580.00	65.5%	$ 1,034.90	$ 545.10	900	$ 1,422,000.00	$ 490,590.00	931,410.00	Included	Included
18.16	E-X5680A-0M-0E-R6	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0M,0E,-C ; Model: 5600		$14,120.00	65.5%	$ 9,248.60	$ 4,871.40	15	$ 211,800.00	$ 73,071.00	138,729.00	Included	Included
18.17	E5600-EXP-R6	E5600-EXP-R6		$0.00	0.0%	$ -	$ -	15	$ -	$ -	-	Included	Included
18.18	OS-SANTRICITY1-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600		$5.28	65.5%	$ 3.46	$ 1.82	90,000	$ 475,200.00	$ 163,944.00	311,256.00	Included	Included
18.19	E-X5003A-0E-R6-C	ESM,SBB-2,0E,-C ; Model: 5600		$780.00	65.5%	$ 510.90	$ 269.10	30	$ 23,400.00	$ 8,073.00	15,327.00	Included	Included
18.20	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600		$75.00	65.5%	$ 49.13	$ 25.88	30	$ 2,250.00	$ 776.25	1,473.75	Included	Included
18.21	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600		$186.00	65.5%	$ 121.83	$ 64.17	15	$ 2,790.00	$ 962.55	1,827.45	Included	Included
18.22	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/22/2017; Model:		$43,924.74	65.5%	$ 28,770.73	$ 15,154.05	15	$ 658,871.10	$ 227,310.74	431,560.96	Included	Included
18.23	X6594-R6	CABLE,CNTLR SHELF/SWITCH,5M,LC,LC,OP ; Model: 5600		$150.00	65.5%	$ 98.25	$ 51.75	24	$ 3,600.00	$ 1,242.00	2,358.00	Included	Included
18.24	X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600		$13.00	65.5%	$ 8.52	$ 4.49	6	$ 78.00	$ 26.91	51.09	Included	Included
#REF!	xxx-xxx-xxxx					$ -	$ -		$ -	$ -	-	Included	Included
#REF!	xxx-xxx-xxxx					$ -	$ -		$ -	$ -	-	Included	Included
#REF!	xxx-xxx-xxxx					$ -	$ -		$ -	$ -	-	Included	Included
#REF!	xxx-xxx-xxxx					$ -	$ -		$ -	$ -	-	Included	Included
#REF!	xxx-xxx-xxxx					$ -	$ -		$ -	$ -	-	Included	Included
	-add additional rows as necessary-													

Table 19
Incremental Storage for Tier 3 purchased after baseline configuration above
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Table 20 Totals
$ 1,320,067.29 $ 485,018.16

Item Part Number	Part Description	Size in TB	Useable Storage in TB	List Price	Discount Percentage	Discount off list price ($)	Net or bid unit price each (e-g)	Quantity	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)	Annual List Price For On-Site Maintenance and/or Support For This Item Years 1-5 All	Bid Price For On-Site Maintenance and/or Support For This Item Years 1-5 All
19.00	NetApp 8200 - 1 Brick												
19.01	SW-2-CL-BASE	SW-2,BASE,CL,NODE ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.02	FAS8200	FAS8200 ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.03	FAS8200A-002	FAS8200 HA SYSTEM,PREMIUM BUNDLE ; Model: FAS8200A		$22,500.00	69.0%	$ 15,525.00	$ 6,975.00	2	$ 45,000.00	$ 13,950.00	31,050.00	Included	Included
19.04	X1133A-R6-C	HBA,4-PORT FCP TRGT/INIT 16GB PCIE W/SFP+,-C ; Model: FAS8200A		$5,200.00	69.0%	$ 3,588.00	$ 1,612.00	2	$ 10,400.00	$ 3,224.00	7,176.00	Included	Included
19.05	X6566B-05-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,0.5M,-C ; Model: FAS8200A		$60.00	10.0%	$ 6.00	$ 54.00	4	$ 240.00	$ 216.00	24.00	Included	Included
19.06	X6566B-3-R6-C	CABLE,DIRECT ATTACH CU SFP+ 10G,3M,-C ; Model: FAS8200A		$95.00	10.0%	$ 9.50	$ 85.50	8	$ 760.00	$ 684.00	76.00	Included	Included
19.07	X66250-5-C	CABLE,LC,OM4,5M,-C ; Model: FAS8200A		$160.00	69.0%	$ 110.40	$ 49.60	16	$ 2,560.00	$ 793.60	1,766.40	Included	Included
19.08	XG235-C	CHASSIS,FAS8200,AFF-A300,AC,PS,-C ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.09	X1065-R6-C	CLUSTERNET INTER-CONNECT,16PT,10GB,-C ; Model: FAS8200A		$5,075.00	10.0%	$ 507.50	$ 4,567.50	2	$ 10,150.00	$ 9,135.00	1,015.00	Included	Included
19.10	DOC-8200-C	DOCUMENTS,8200,-C ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.11	X1985-R6-C	12-NODE CLUSTER CABLE LABEL KIT,-C ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.12	X800-42U-R6-C	POWER CABLE,IN CABINET,C13-C14,-C ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	6	$ -	$ -	-	Included	Included
19.13	X-02659-00-C	RAIL KIT,4-POST,RND/SQ-HOLE,ADJ,24-32,-C ; Model: FAS8200A		$115.00	69.0%	$ 79.35	$ 35.66	1	$ 115.00	$ 35.65	79.35	Included	Included
19.14	X6598-R6-C	SFP+ FC OPTICAL 16GB,-C ; Model: FAS8200A		$1,035.00	69.0%	$ 714.15	$ 320.85	4	$ 4,140.00	$ 1,283.40	2,856.60	Included	Included
19.15	X6599A-R6-C	SFP+ OPTICAL 10GB SHORTWAVE,FAS80XX,-C ; Model: FAS8200A		$795.00	69.0%	$ 548.55	$ 246.45	4	$ 3,180.00	$ 985.80	2,194.20	Included	Included
19.16	OS-ONTAP1-PREM1RISW	3RD PARTY STOR,PREMIUM BDLE,PRICE,8240A,-C ; Model: FAS8200A		$80,000.00	69.0%	$ 55,200.00	$ 24,800.00	2	$ 160,000.00	$ 49,800.00	110,400.00	Included	Included
19.17	SW-2-8200A-NVE-C	SW,DATA AT REST ENCRYPTION ENABLED,8200A,-C ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	2	$ -	$ -	-	Included	Included
19.18	SW-2-8200A-TPM-C	SW,TRUSTED PLATFORM MODULE ENABLED,8200A,-C ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	2	$ -	$ -	-	Included	Included
19.19	SW-7-8200A-VN-STO	SW-2,FLEXARRAY VIRTUALIZATION,8200A,-C ; Model: FAS8200A		$8,200.00	69.0%	$ 5,658.00	$ 2,542.00	2	$ 16,400.00	$ 5,084.00	11,316.00	Included	Included
19.20	DATA-AT-REST-ENCRY	DATA AT REST ENCRYPTION CAPABLE OPERATING SYS ; Model: FAS8200A		$0.00	0.0%	$ -	$ -	2	$ -	$ -	-	Included	Included
19.21	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model:		$130,485.26	69.0%	$ 90,034.83	$ 40,449.81	1	$ 130,485.26	$ 40,449.81	90,035.45	Included	Included
19.22	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600		$1,580.00	69.0%	$ 1,090.20	$ 489.80	60	$ 94,800.00	$ 29,388.00	65,412.00	Included	Included
19.23	E-X5684A-0E-R6-C	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0E,-C ; Model: 5600		$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	2	$ 14,120.00	$ 8,754.40	9,742.80	Included	Included
19.24	E5600-R6	E5600-R6		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.25	OS-SANTRICITY-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600		$5.28	69.0%	$ 3.64	$ 1.64	6,000	$ 31,680.00	$ 9,820.80	21,859.20	Included	Included
19.26	DOC-PFK-E-SERIES-0E	DOCUMENT,PFK,E-SERIES,0E,-C ; Model: 5600		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.27	E5600A-48GB-0E-C	E5600A,48GB CONTROLLER,NO HIC,0E,-C ; Model: 5600		$21,631.00	69.0%	$ 14,925.39	$ 6,705.61	2	$ 43,262.00	$ 13,411.22	29,850.78	Included	Included
19.28	X-48619-00-0E-C	BATTERY,E5400,E5500,E5600,0E,-C ; Model: 5600		$408.00	69.0%	$ 281.52	$ 126.48	2	$ 816.00	$ 252.96	563.04	Included	Included
19.29	X-56018-00-0E-C	HIC,E5600-48GB,16GB FC,4-PORTS,0E,-C ; Model: 5600		$2,153.00	69.0%	$ 1,485.57	$ 667.43	2	$ 4,306.00	$ 1,334.86	2,971.14	Included	Included
19.30	X-48895-00-0E-R6-C	SFP,10GB iSCSI/16GB FC,UNIFIED,E-SERIES,0E,-C ; Model: 5600		$400.00	69.0%	$ 276.00	$ 124.00	8	$ 3,200.00	$ 992.00	2,208.00	Included	Included
19.31	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600		$75.00	69.0%	$ 51.75	$ 23.25	2	$ 150.00	$ 46.50	103.50	Included	Included
19.32	DOC-E-SERIES-4U-SYS	INSTALL DOCUMENTS,SYSTEM,DE6600,0E,-C ; Model: 5600		$0.00	0.0%	$ -	$ -	1	$ -	$ -	-	Included	Included
19.33	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600		$186.00	69.0%	$ 128.34	$ 57.66	1	$ 186.00	$ 57.66	128.34	Included	Included
19.34	SW-5600-FDE-SKM-0E	SW,FDE SEC KEY MGMT,5600,0E,-P ; Model: 5600		$2,720.00	69.0%	$ 1,876.80	$ 843.20	1	$ 2,720.00	$ 843.20	1,876.80	Included	Included
19.35	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model:		$63,590.69	69.0%	$ 43,877.58	$ 19,713.11	1	$ 63,590.69	$ 19,713.11	43,877.58	Included	Included
19.36	E-X4121A-0E-C	DSK DRV,10TB,7.2K,FIPS,DE6600,0E,-C ; Model: 5600		$1,580.00	69.0%	$ 1,090.20	$ 489.80	180	$ 284,400.00	$ 88,164.00	196,236.00	Included	Included
19.37	E-X5680A-0M-0E-R6	ENCLOSURE,4U-60,DE6600,EMPTY,2PSU,0M,0E,-C ; Model: 5600		$14,120.00	69.0%	$ 9,742.80	$ 4,377.20	3	$ 42,360.00	$ 13,131.60	29,128.40	Included	Included
19.38	E5600-EXP-R6	E5600-EXP-R6		$0.00	0.0%	$ -	$ -	3	$ -	$ -	-	Included	Included
19.39	OS-SANTRICITY-CAP	OS ENABLE,PER-0.1TB,SANTRICTY,CAP-STOR,0E,-C ; Model: 5600		$5.28	69.0%	$ 3.64	$ 1.64	18,000	$ 95,040.00	$ 29,462.40	65,577.60	Included	Included
19.40	E-X5003A-0E-R6-C	ESM,SBB-2,0E,-C ; Model: 5600		$780.00	69.0%	$ 538.20	$ 241.80	6	$ 4,680.00	$ 1,450.80	3,229.20	Included	Included
19.41	X-20004-00-0E-R6-C	CABLE,MINISAS,1M,0E,-C ; Model: 5600		$75.00	69.0%	$ 51.75	$ 23.25	6	$ 450.00	$ 139.50	310.50	Included	Included
19.42	X-50613-00-0E-C	POWER CORD,IN CABINET,2M,C14-C19,DE6600,0E,-C ; Model: 5600		$186.00	69.0%	$ 128.34	$ 57.66	3	$ 558.00	$ 172.98	385.02	Included	Included
19.43	CS-O2-4HR	SUPPORTEDGE PREMIUM 4HR ONSITE Service Months: 60.0; Service Start Date: 2/21/2017; Model:		$43,924.74	69.0%	$ 30,308.10	$ 13,616.68	3	$ 131,774.34	$ 40,850.05	90,924.29	Included	Included
19.44	X6594-R6	CABLE,CNTLR SHELF/SWITCH,5M,LC,LC,OP ; Model: 5600		$150.00	69.0%	$ 103.50	$ 46.50	8	$ 1,200.00	$ 372.00	828.00	Included	Included
19.45	X6562-R6	CABLE,ETHERNET,5M RJ45 CAT6 ; Model: 5600		$13.00	69.0%	$ 8.97	$ 4.03	2	$ 26.00	$ 8.06	17.94	Included	Included
19.05	xxx-xxx-xxxx					$ -	$ -	1	$ -	$ -	-	Included	Included
	-add additional rows as necessary-													

Table 20
Professional Services for Phase B High
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move files and train city staff for Phase B High

Table 20 Totals
$ 58,660.00 $ 52,794.00

Item Part Number	Part Description			List Price Per Hour	Discount Percentage	Discount off list price ($)	Net or bid unit price each (e-g)	Number of Hours Required	Extended list price (e*i)	extended net price (h*i)	line item discount (j-k)
20.00	CDWSERVICES	Planning and Design		$ 350.00	10%	$ 35.00	$ 315.00	40	$ 14,000.00	$ 12,600.00	1,400.00
20.01	CDWSERVICES	Installation and configuration service		$ 350.00	10%	$ 35.00	$ 315.00	100	$ 35,000.00	$ 31,500.00	3,500.00
20.02	CDWSERVICES	Project Management		$ 210.00	10%	$ 21.00	$ 189.00	46	$ 9,660.00	$ 8,694.00	966.00
#REF!	xxx-xxx-xxxx			$ -		$ -	$ -		$ -	$ -	-
	-add additional rows as necessary-										

Our proposal includes 5YR of Support/Maintenance on all the hardware because the best value to the City of Columbus is to procure that up front.

You could procure these systems with just 1 year of support up front but the annual renewal costs are prohibitive compared with buying multiple years up front.

Below are samples of what those additional support costs would look like if you don't buy with 5yrs upfront.

Annual Support - If bought with 1yr support

	Annual List Price For On-Site Maintenance and/or Support For This Item					Bid Price For On-Site Maintenance and/or Support For This Item				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Phase A Low - Tier 1	Included	$ 32,996.12	$ 32,996.12	$ 58,141.94	$ 58,141.94	Included	$ 29,696.51	$ 29,696.51	$ 52,327.75	$ 52,327.75
Phase A Low - Tier 3	Included	$ 44,362.19	$ 44,362.19	$ 91,951.01	$ 91,951.01	Included	$ 39,925.97	$ 39,925.97	$ 82,755.91	$ 82,755.91
Phase B Low - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B Low - Tier 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase A High - Tier 1	Included	$ 32,996.12	$ 32,996.12	$ 58,141.94	$ 58,141.94	Included	$ 29,696.51	$ 29,696.51	$ 52,327.75	$ 52,327.75
Phase A High - Tier 3	Included	$ 88,724.38	$ 88,724.38	$ 183,902.02	$ 183,902.02	Included	$ 79,851.94	$ 79,851.94	$ 165,511.82	$ 165,511.82
Phase B High - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B High - Tier 3	Included	$ 133,086.57	$ 133,086.57	$ 275,853.03	$ 275,853.03	Included	$119,777.91	$119,777.91	$ 248,267.73	$ 248,267.73

Annual Support - If bought with 3yr support

	Annual List Price For On-Site Maintenance and/or Support For This Item					Bid Price For On-Site Maintenance and/or Support For This Item				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Phase A Low - Tier 1	Included	Included	Included	$ 58,141.94	$ 58,141.94	Included	Included	Included	$ 52,327.75	$ 52,327.75
Phase A Low - Tier 3	Included	Included	Included	$ 91,951.01	$ 91,951.01	Included	Included	Included	$ 82,755.91	$ 82,755.91
Phase B Low - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B Low - Tier 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase A High - Tier 1	Included	Included	Included	$ 58,141.94	$ 58,141.94	Included	Included	Included	$ 52,327.75	$ 52,327.75
Phase A High - Tier 3	Included	Included	Included	$ 183,902.02	$ 183,902.02	Included	Included	Included	$ 165,511.82	$ 165,511.82
Phase B High - Tier 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase B High - Tier 3	Included	Included	Included	$ 275,853.03	$ 275,853.03	Included	Included	Included	$ 248,267.73	$ 248,267.73

<u>Exceptions to Terms and Conditions</u>

CDW Government LLC ("Offeror" or "Contractor") proposes the following changes to the terms and conditions of the RFP issued by the City of Columbus, Ohio (the "Purchaser" or "City"). Insertions are underlined and deletions are stricken through. All other proposals will be indicated in **bold**. These proposals are for the City's review and input. Notwithstanding what is stated in the RFP, Contractor shall not be bound to any terms and conditions of the RFP or to any contract related to the RFP until or unless: (i) the City confirms in writing its acceptance of these deviations as fully incorporated therein; or (ii) authorized representatives of both parties execute a written contract that is separate from the RFP.

Before services are to be performed, Contractor will create a Statement of Work ("SOW") detailing the exact scoping and pricing of the services to be provided, which will be executed by both parties prior to the start of services. The SOW will reflect the terms and conditions as negotiated between the parties during the bidding and contracting process.

I.   Information for Offerors

Save Harmless (Page 3B)
Contractor shall protect, indemnify and save the City harmless from and against any damage, cost, or liability, including reasonable attorneys' fees resulting from claim, by third parties for any or all injuries to persons or <u>tangible personal</u> property arising from the <u>negligent</u> acts<u>, willful misconduct,</u> or omissions of the Contractor, its officers, employees, agents, or Subcontractors in providing goods or services under the terms and conditions of this contract.

Save Harmless Disclosure of Proprietary Information (Page 3B); and Proprietary Information Indemnification (Page 3B)
The Contractor agrees to indemnify and hold harmless the City of Columbus, Ohio and their respective officials, employees and other agents and representatives, against <u>third party</u> loss, claim, liability in tort or by statute imposed, charge, cost or expense, including without limitation, attorneys fees to the extent permitted; by law, which may be incurred in connection with, or in any manner of any damage or loss arising from disclosure of proprietary information.

Public Liability Insurance (Page 3C); and Insurance Requirements (Pages 4EE-FF)
The contractor shall take out and maintain during the life of the contract, such Public Liability (bodily injury and property damage) Insurance as shall protect him from claims from damages for personal injury, including accidental death, as well as from claims for property damage which may arise from operations under the contract, whether such operation be by himself or any subcontractor or by anyone directly ~~or indirectly~~ employed by either of them. Such insurance policy shall include the city as ~~named~~ insured. The Contractor shall maintain coverage of the types and in the amounts specified below. Submitting a certificate of insurance shall evidence proof of such insurance coverage. A contractor's "umbrella" type policy with limits specified below may be submitted for this requirement, with the City <u>included</u> as ~~named~~ <u>additional</u> insured.

The amount of such insurance shall be as follows:
Bodily Injury Liability
Each Person $1,000,000.00
Each Accident $1,000,000.00
Property Damage Liability
Each Person $1,000,000.00
All Accidents $1,000,000.00

Such insurance shall remain in full force and effect during the life of the contract. Insurance may not be changed ~~or cancelled~~ unless the insured and the City are notified in writing ~~not less than thirty days~~ prior to such change ~~or cancellation~~. If any part of the contract is sublet, the Contractor

is responsible for the part sublet being adequately covered by insurance herein above described.

Contractor assumes all risk of loss and damage to the equipment provided <u>up to the point of delivery.</u> ~~unless loss or damage occurs at the time the operator and equipment are being operated for the purpose designated by the City and such loss or damages is caused by an act of the City or its employee which constitutes gross negligence or wanton misconduct~~

Limitation of Liability
UNDER NO CIRCUMSTANCES, AND NOTWITHSTANDING THE FAILURE OF ESSENTIAL PURPOSE OF ANY REMEDY SET FORTH HEREIN, WILL CONTRACTOR, ITS AFFILIATES OR ITS OR THEIR SUPPLIERS, SUBCONTRACTORS OR AGENTS BE LIABLE FOR: ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, BUSINESS, REVENUES OR SAVINGS, AND LOSS, DAMAGE OR CORRUPTION OF DATA OR SOFTWARE, EVEN IF CONTRACTOR HAS BEEN ADVISED OF THE POSSIBILITIES OF SUCH DAMAGES OR IF SUCH DAMAGES ARE OTHERWISE FORESEEABLE, IN EACH CASE, AND WHETHER A CLAIM FOR ANY SUCH LIABILITY IS PREMISED UPON BREACH OF CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHER THEORY OF LIABILITY. IN THE EVENT OF ANY LIABILITY INCURRED BY CONTRACTOR OR ANY OF ITS AFFILIATES HEREUNDER, THE ENTIRE LIABILITY OF SELLER AND ITS AFFILIATES FOR DAMAGES FROM ANY CAUSE WHATSOEVER WILL NOT EXCEED THE LESSER OF: (A) THE DOLLAR AMOUNT PAID BY PURCHASER FOR THE SPECIFIC PRODUCT OR SERVICE PURCHASED ITEM(S) GIVING RISE TO THE CLAIM; OR (B) $50,000.00.

II.   Information for Offerors and Proposal

§7.1.6   The BWC portion includes two phases:

Phase A: Includes the design of Tier-1 and Tier-3 storage for the entire BWC program, and the acquisition and installation of a portion of Tier-1 storage and Tier-3 storage for calendar year 2017. Phase A will also include moving BWC video files from the city''s existing storage array to the newly acquired video array. 3.6. <u>The City shall be solely responsible for daily back-up and other protection of its data and software against loss, damage or corruption during the performance of Services and for any necessary reconstruction thereof.</u>

§7.2.4
The City desires a resilient and redundant storage solution for Tier 3 storage. This RFP includes two phases:

Phase A: Includes the design of Tier-3 storage for the entire DC program, and the acquisition and installation of a portion of Tier-3 storage for calendar year 2017. Phase A will also include moving DC video files from the city's existing storage array. <u>The City shall be solely responsible for daily back-up and other protection of its data and software against loss, damage or corruption during the performance of Services and for any necessary reconstruction thereof.</u>

Appendix – NetApp Environmental Information

Grand Totals: Measurements (Units)

All Components

Systems (Controllers Chassis)		
Power Inlets		6
Weight	420.32 lbs / 190.65 kg	
Rack Units		13

Shelves		
Power Inlets		8
Weight	711.27 lbs / 322.63 kg	
Rack Units		14

Cabinets		
Power Inlets	n/a	
Weight	n/a	
Rack Units	n/a	

Grand Total		
Power Inlets		14
Weight	1131.59 lbs / 513.28 kg	
Rack Units		27

Systems	Qty	Current Draw (Amps)		AC Power (Watt)		AC Power (VA)		Thermal Rating (BTU)		Power (kWh/year)	
		Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst
E5660 Duplex 24GB with (E=X4121A)60"1	1	5.25	5.97	1,143.33	1,299.82	1,203.51	1,368.23	3,901.20	4,435.17	10,022.43	11,394.22
AFF8040A (2xControllers, 1xChassis)	1	2.98	4.28	596	855	627.37	900	2,032	2,916	5,224.54	7,494.93
FAS8200A (2xControllers, 1xChassis)	1	2.77	3.19	542	624	570.53	656.84	1,850	2,130	4,751.17	5,469.96
Total	1	11.00	13.44	2,281.33	2,778.82	2,401.41	2,925.07	7,783.20	9,481.17	19,998.14	24,359.13

Shelves	Qty	Current Draw (Amps)		AC Power (Watt)		AC Power (VA)		Thermal Rating (BTU)		Power (kWh/year)	
		Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst
DE6600 w/ (E=X4121A)60"10TB NL-SAS7	3	11.46	13.62	2,498.22	2,967.69	2,629.71	3,123.87	8,524.29	10,126.17	21,899.40	26,014.77
DS224C w/ (X358A)24*3.8TB SSD	1	0.54	1.42	124	278	130.53	292.63	424	949	1,086.98	2,436.95
Total	3	12.10	15.04	2,622.22	3,245.69	2,760.24	3,416.50	8,948.29	11,075.17	22,986.38	28,451.72

Grand Total	4	23.10	28.48	4,903.55	6,024.51	5,161.65	6,341.57	16,731.49	20,556.34	42,984.52	52,810.85

Grand Totals: Measurements (Units)

All Components

Systems (Controllers Chassis)		
Power Inlets	10	
Weight	869.96 lbs / 394.61 kg	
Rack Units	21	

Shelves		
Power Inlets	20	
Weight	2026.23 lbs / 919.09 kg	
Rack Units	38	

Cabinets		
Power Inlets	n/a	
Weight	n/a	
Rack Units	n/a	

Grand Total		
Power Inlets	30	
Weight	2896.21 lbs / 1313.7 kg	
Rack Units	59	

Systems	Qty	Current Draw (Amps)		AC Power (Watt)		AC Power (VA)		Thermal Rating (BTU)		Power (kWh/year)	
		Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst
E5660 Duplex 24GB with (E-X4121A)60*10TB NL-SAS 7.2k	3	15.75	17.91	3,429.89	3,899.46	3,610.53	4,104.69	11,703.50	13,305.51	30,067.29	34,182.66
AFF8040A (2xControllers, 1xChassis)	1	2.96	4.28	596	855	627.37	900	2,032	2,916	5,224.54	7,494.93
FAS8200A (2xControllers, 1xChassis)	3	2.77	3.19	542	624	570.53	658.84	1,850	2,130	4,751.17	5,466.98
Total	7	21.50	25.38	4,567.89	5,378.46	4,808.43	5,661.53	15,585.60	18,351.51	40,043.00	47,147.57

Shelves	Qty	Current Draw (Amps)		AC Power (Watt)		AC Power (VA)		Thermal Rating (BTU)		Power (kWh/year)	
		Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst
DE6600 w/ (E-X4121A)60*10TB NL-SAS 7.2k	9	103.14	122.58	22,483.98	26,709.21	23,667.35	28,114.83	76,716.61	91,135.53	197,094.60	28,014.77
DS224C w/ (X356A)24*3.8TB SSD	1	0.64	1.42	124	278	130.53	292.63	424	848	1,096.68	2,436.85
Total	3	103.78	124.00	22,807.98	26,987.21	23,797.92	28,407.46	77,142.61	92,084.63	198,181.58	28,451.72

Grand Total	10	125.28	149.38	27,175.97	32,365.67	28,606.35	34,068.99	92,728.21	110,436.04	238,224.58	75,599.29

Grand Totals: Measurements (Units)

All Components

Systems	Power Inlets	8
(Controllers Chassis)	Weight	645.15 lbs / 292.56 kg
	Rack Units	17
Shelves	Power Inlets	18
	Weight	1807.08 lbs / 881 kg
	Rack Units	34
Cabinets	Power Inlets	n/a
	Weight	n/a
	Rack Units	n/a
Grand Total	Power Inlets	26
	Weight	2452.23 lbs / 1112.31 kg
	Rack Units	51

Systems	Qty	Current Draw (Amps)		AC Power (Watt)		AC Power (VA)		Thermal Rating (BTU)		Power (kWh/year)	
		Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst
E5660 Duplex 24GB with (E-X4121A)60*10TB NL-SAS 7.2k	1	5.25	5.97	1,143.33	1,299.82	1,203.51	1,368.23	3,901.20	4,435.17	10,022.43	11,394.22
AFF8040A (2x Controllers, 1xChassis)	1	2.98	4.28	566	855	627.37	900	2,032	2,916	5,224.54	7,494.93
Total		8.23	10.25	1,735.33	2,154.82	1,830.88	2,268.23	5,933.20	7,351.17	15,246.97	18,889.15

Shelves	Qty	Current Draw (Amps)		AC Power (Watt)		AC Power (VA)		Thermal Rating (BTU)		Power (kWh/year)	
		Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst	Typical	Worst
DE6600 w/ (E-X4121A)60*10TB NL-SAS 7.2k	5	19.1	22.7	4,153.70	4,946.15	4,392.85	5,206.45	14,207.18	16,876.95	36,499.80	43,357.95
DS224C w/ (X356A)24*3.8TB SSD	1	0.64	1.42	124	278	130.53	292.63	424	949	1,086.96	2,436.55
Total	3	19.74	24.12	4281.7	5224.15	4513.38	5499.08	14631.18	17825.95	37585.97	45794.9

Grand Total		Current Draw		AC Power		AC Power		Thermal Rating		Power	
	4	27.97	34.37	6,027.03	7,378.97	6,344.26	7,767.31	20,564.35	25,177.12	52,832.94	64,684.05

NetApp

March 2, 2017

REF: Letter of Good Standing in support of City of Columbus, Ohio RFQ004361

To Whom It May Concern:

CDW is a longstanding, top tier NetApp partner authorized to resell NetApp products and services to State, Local Government and Education as well as U.S. Federal Government entities within the United States.

CDW's reseller agreement with NetApp effective since 2008, auto extends, in one year terms, unless terminated by either party.

NetApp is a manufacturer of commercial items and follows standard commercial practices regarding product lifecycle maintenance. The typical product lifecycle of NetApp storage controllers is between three and five years. When a mature storage platform is to be retired from NetApp's product line, we provide an announcement of its End of Availability date. NetApp reserves the right to discontinue obsolete products (products that have reached "End of Availability").

The NetApp storage controllers proposed as part of this response are recently released products, with no announced End of Availability date. Additionally, NetApp will typically provide maintenance support for storage controllers for five years after the End of Availability; the scope of such support may be limited in NetApp's discretion.

Sincerely,

Thomas R. Balaban III
Thomas R. Balaban III (Mar. 2, 2017)

Tom Balaban
Sr. Director
NetApp, Inc.

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

mpany Name CDW Government LLC
ontact Name Nick Geiser
hone Number 614.318.9058
-mail Address nickgei@cdwg.com

Please complete the required pricing for the Phase A and B low and high pricing estimates
Each tab includes a main area for the baseline configuration and additional space for incremental storage
Each tab also includes an area for professional services for installation, configuration and training
Sample data provided herein is for illustrative purposes only and should be replaced with actual data
Additional rows may be added by the bidder; HOWEVER, please change the formula for the table totals or sum columns j and k and insert in the table totals above

As mentioned in our narrative, we have put together two possible NetApp hardware solutions.
Accordingly, you will find two fully detailed pricing worksheets to show the cost differences.
There is a large amount of information as a part of the pricing worksheets so we wanted to highlight
some important notes regarding our worksheets.
We tried as best as possible to follow the format but are happy to answer any questions you may have.
1. Our Tier 1 solution immediately exceeds your Phase A and B expectations, which will result in less
complexity and is more cost efficient over time. As such, there is no need to add more controllers or
capacity over time and we left Phase B blank to show that.

2. In some cases, like the Tier 3 storage addition in Phase B Low estimation our offering provide
more than enough because It's the most efficient and cost effective.

3. We built all solutions to come with five years of support up front. Again, this is the most cost
effective way to procure NetApp support.

4. In case you would like to see the option of procuring 1yr or 3yr support up front and subsequently
the annual costs to support the hardware, we have added a fifth Tab called "Support Options".

5. All Professional Services estimates are based solely on our hardware builds and do not take into
account any current environmental or resource considerations from City of Columbus.

6. We require a final design discussion and review with the City of Columbus after which we can
provide a formal Statement of Work describing the formal scope, deliverables and terms/conditions.

7. CDW is proposing a Migration Workshop were we can develop a migration plan for the City of
Columbus based on best practices. Most customers prefer to use their own resources to actually
migrate their data on their own schedules.

8. We can offer our migration resources if you would like to leverage our team. CDW can provide a
Migration worksheet to properly scope those additional resources.

9. We are proposing that the City of Columbus utilize NetApp training courses to get formal best
practices along with any over the shoulder training from the CDW implementation. We have included
credits for (3) 5 Day courses in each Phase A.

Bidder's Summary For Phase A and B Estimates - Option #1

Phase A Low

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	65TB*	$ 746,574.97	$ 200,970.57
Tier 3 Storage	1,295.00TB	$ 1,202,747.29	$ 379,430.16
Phase A Professional Services****		$ 68,940.00	$ 62,046.00

Phase B Low

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	**	$ -	$ -
Tier 3 Storage	1,295.00TB***	$ 1,202,747.29	$ 379,430.16
Phase B Professional Services		$ 38,500.00	$ 34,650.00

Phase A High

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	65TB*	$ 746,574.97	$ 200,970.57
Tier 3 Storage	3800TB	$ 3,608,241.87	$ 1,138,290.48
Phase A Professional Services****		$ 74,260.00	$ 66,834.00

Phase B High

	Useable Storage in TB's	Total Extended List Price	Total Extended Net Price
Tier 1 Storage	**	$ -	$ -
Tier 3 Storage	3700TB	$ 3,608,241.87	$ 1,138,290.48
Phase B Professional Services		$ 46,760.00	$ 42,084.00

Ranges:

	LOW	HIGH
PHASE A	$ 642,446.73	$ 1,406,095.05
PHASE B	$ 414,080.16	$ 1,180,374.48

Reference:

* Initial outlay of 65TB is exceeds your Phase A and B requests, however we believe this results in least complexity and lowest cost over time

** Since the initial outlay of 65TB exceeds your total requests, we wanted to show that there is no need to add controllers and capacity in Phase B

*** This does exceed Phase B Low estimate, however this is still the most simplistic and cost effective avenue to add controllers and capacity (smaller increments are available)

**** Phase A Services included both a Migration Workshop and Training for 3 People for 1 Week Each. The Migration will plan out the Migration using best practices however City of Columbus will handle migrations. This is normal for most customers but if you would like CDWG to handle the migrations then we would need to more information to properly scope.

Phase A Low Estimate
For Calendar Year 2017

Table 1 Baseline configuration for Tier 1 Low Estimate
Use the worksheet below to describe requested hardware, software and licensing components for Phase A and complete the storage of:

Table 1 Totals: $ 746,574.97 | $ 300,078.57

Table 2
Incremental Storage for Tier 1 purchased after baseline configuration above.
In the table below, provide additional production information for adding Tier 2 storage via scale-out incrementally, add additional rows as necessary

Table 3 Baseline configuration for Tier 3 Low Estimate
Use this worksheet below to describe requested hardware, software and licensing components for Phase A and complete the storage of: 3,285,027.0 TB

Table 3 Totals: $ 1,201,747.28 | $ 379,490.16

Table 4
Incremental Storage for Tier 3 purchased after baseline configuration above.
In the table below, provide additional production information for adding Tier 3 storage via scale-out incrementally, add additional rows as necessary

Table 5
Professional Services for Phase A Low
In the table below, provide information regarding the proposed statement of work and hourly rates to design, configure, install, move files and train on the Phase A Low

Table 5 Totals: $ 68,940.00 | $ 67,046.00

Columbus PS Video
UTC Categories

Prepared For : **City of Columbus**
Customer # : **12270466**
Attention : **Antonio Beasley**
Project : **NetApp UTC**
Date : **5/16/2017**

Submitted By : Nick Geiser

Phone : 614.318.9058
E-Mail: nickgei@cdwg.com
Quote # :

Manufacturer	Category	Discount % off MFG List	
Hardware/Software			
NetApp	Software	20%	
NetApp	Altavault	20%	
NetApp	Training Credits	10%	
Cisco	SFPs/Switching Components	52%	
Safenet/Gemalto	Appliances	10%	
Safenet/Gemalto	Software	10%	
Services			
CDW	Professional Services	10%	
NetApp	Professional Services	15%	
Panasonic	Professional Services - Arbitrator Migration	20%	
Safenet/Gemalto	Professional Services	5%	

The terms and conditions provided on this link apply: http://www.cdw.com/content/terms-conditions/default.aspx

ATTACHMENT D

Number	Question	Answer
1	What improvements is the City of Columbus looking to make with this new solution over what the current video surveillance storage architecture provides?	The City is looking for greater capacity expansion, the designated RFP IOPS speed, as well as a **cost-effective** solution capable of handling large amounts of video storage.
2	How many Video Management Systems will support the proposed environment?	Immediately it will be supporting two separate video management systems, however that may expand in year two or after.
3	Can the files that will reside on the new solution be stubbed for long term archive?	No
4	For 8.22.81, the question about Company History, are you looking for Company History information on the manufacturer of the proposed solution or the Business Partner for the proposed solution	The city would like information for both the manufacturer and potential partner.
5	Is the 80 page limit inclusive of attachments and appendix items? E.G. A copy of an SOW could be 10-20 pages. Would that take away from the 80 page limit?	The required RFP pages including the signature page may be excluded from the total page count.
6	please define the current SLA requirements defined in section 8.2.1.2	Current SLA for the Storage system should reflect the RPO of 24 hours or less as well as the RTO of 4 hours or less
7	For the encryption, do you require the ability to individually encrypt some volumes and not others, or do you need "all or nothing" encryption for all of the storage?	Granular Encryption is preferred if encryption is available.
8	In order to get to the required capacity, can space efficiencies such as deduplication and compression be used to achieve the required capacity?	No, neither may be considered for capacity requirements in the solution.
9	Watch Guard Vista traditionally runs over block storage, the RFP calls out a need for CIFS/NFS/ISCSI/FCP connectivity. Will all of these protocols be used for Watch Guard or only a subsection of the application? If just a subsection, can you provide the segment capacity?	All the identified protocols will only be used selectively and do not need to support the entire solution. Currently any subsections requiring block storage have not been identified fully to provide capacity estimates.
10	IO and MB requirements were given in the RFP but not an IO size. Can this be provided?	A large block size of 512 bytes is used for all IOP calculations.
11	Per Section 8.2.2.17 Proposal Evaluation Criteria. Is there a particular weight assigned to each of the subsections (Quality & Feasibility, Ability, etc...) or are all 5 subsections weighted equally?	Yes, the criteria is weighted. They are not weighted equally. See Appendix A.

#	Question	Response
12	Per Section 8.2.2.7. Does the City expect the offerer to perform the migration of all video on the current systems including BWC, Dash Cameras and Public Records Video onto the new platform or would the city be willing to handle those migrations after the offeror has performed a certain % of the migrations and taught the Columbus IT Staff how to do the migrations themselves?	Offeror may identify as a separate line item that will be evaluated based on proposed solution.
13	Per Section 8.2.2.6.3. How many IT staff members would be included in the training sessions? How many IT staff members would be dedicated to managing the solution?	Three employees will be included in training sessions. Three employees will be dedicated to managing the new solution.
14	Per Section 8.2.2.6. Is there a specific warranty coverage period that they City would like to have included (i.e. 3yrs or 5yrs)?	Please offer both 3 year pricing and 5 year pricing
15	Per Section 8.2.2.6.2. Does the City prefer to pay for maintenance annually or would you consider pay 3yr or 5yrs up front?	Based on the City's budgeting process the City may only pay on a year-for-year basis
16	For the Tier 1 storage requirements, we are considering an architecture that converges an internal SSD write cache architecture (up to 800GB per node and aggregated up to 9.6TB) with a spinning disk solution that manages the de-staging from the SSD write cache to spinning disk. This is a proven solution in similar size and scope environments; will the City deem this architecture acceptable to satisfy the requirement?	
17	What is the projected peak offload at any given time? Of the 1500 body cameras, how many would be uploading data simultaneously to the storage solution? What would be the projected peak bandwidth and storage requirements?	Approximately 400 users (2,784 Gb of data getting offloaded) at peak times will be uploading data simultaneously from 25 locations. Each location has 1 Gb fiber connectivity to the data center.
18	To achieve the desired data encryption, is a combination of Trusted Platform Module (TPM) and software-based data encryption deemed acceptable?	If the proposed solution meets all other RFP technical requirements.

Proposed Award Agreement Language for the City of Columbus, Ohio
Request for Proposal RFQ004361 ("RFP") for Video Storage UTC

Exceptions to Terms and Conditions

CDW Government LLC ("Offeror" or "Contractor") proposes the following changes to the terms and conditions of the RFP issued by the City of Columbus, Ohio (the "Purchaser" or "City"). Insertions are underlined and deletions are stricken through. All other proposals will be indicated in **bold**. These proposals are for the City's review and input. Notwithstanding what is stated in the RFP, Contractor shall not be bound to any terms and conditions of the RFP or to any contract related to the RFP until or unless: (i) the City confirms in writing its acceptance of these deviations as fully incorporated therein; or (ii) authorized representatives of both parties execute a written contract that is separate from the RFP.

Before services are to be performed, Contractor will create a Statement of Work ("SOW") detailing the exact scoping and pricing of the services to be provided, which will be executed by both parties prior to the start of services. The SOW will reflect the terms and conditions as negotiated between the parties during the bidding and contracting process.

I.   Information for Offerors

Save Harmless (Page 3B)
Contractor shall protect, indemnify and save the City harmless from and against any damage, cost, or liability, including reasonable attorneys' fees resulting from claim, by third parties for any or all injuries to persons or tangible personal property arising from the negligent acts, willful misconduct, or omissions of the Contractor, its officers, employees, agents, or Subcontractors in providing goods or services under the terms and conditions of this contract.

Save Harmless Disclosure of Proprietary Information (Page 3B); and Proprietary Information Indemnification (Page 3B)
The Contractor agrees to indemnify and hold harmless the City of Columbus, Ohio and their respective officials, employees and other agents and representatives, against third party loss, claim, liability in tort or by statute imposed, charge, cost or expense, including without limitation, attorneys fees to the extent permitted; by law, which may be incurred in connection with, or in any manner of any damage or loss arising from disclosure of proprietary information.

Public Liability Insurance (Page 3C); and Insurance Requirements (Pages 4EE-FF)
The contractor shall take out and maintain during the life of the contract, such Public Liability (bodily injury and property damage) Insurance as shall protect him from claims from damages for personal injury, including accidental death, as well as from claims for property damage which may arise from operations under the contract, whether such operation be by himself or any subcontractor or by anyone directly employed by either of them. Such insurance policy shall include the city as insured. The Contractor shall maintain coverage of the types and in the amounts specified below. Submitting a
certificate of insurance shall evidence proof of such insurance coverage. A contractor's "umbrella" type policy with limits specified below may be submitted for this requirement, with the City included as additional insured.

The amount of such insurance shall be as follows:
   Bodily Injury Liability
   Each Person $1,000,000.00
   Each Accident $1,000,000.00
   Property Damage Liability
   Each Person $1,000,000.00
   All Accidents $1,000,000.00

Such insurance shall remain in full force and effect during the life of the contract. Insurance may not be changed unless the insured and the City are notified in writing   prior   to   such   change.   If   any   part   of   the   contract   is   sublet,   the   Contractor is responsible for the part sublet being adequately covered by insurance herein above described.

Contractor assumes all risk of loss and damage to the equipment provided up to the point of delivery.

Limitation of Liability
UNDER NO CIRCUMSTANCES, AND NOTWITHSTANDING THE FAILURE OF ESSENTIAL PURPOSE OF ANY REMEDY SET FORTH HEREIN, WILL CONTRACTOR, ITS AFFILIATES OR ITS OR THEIR SUPPLIERS, SUBCONTRACTORS OR AGENTS BE LIABLE FOR: ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, BUSINESS, REVENUES OR SAVINGS, AND LOSS, DAMAGE OR CORRUPTION OF DATA OR SOFTWARE, EVEN IF CONTRACTOR HAS BEEN ADVISED OF THE POSSIBILITIES OF SUCH DAMAGES OR IF SUCH DAMAGES ARE OTHERWISE FORESEEABLE, IN EACH CASE, AND WHETHER A CLAIM FOR ANY SUCH LIABILITY IS PREMISED UPON BREACH OF CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHER THEORY OF LIABILITY. IN THE EVENT OF ANY LIABILITY INCURRED BY CONTRACTOR OR ANY OF ITS AFFILIATES HEREUNDER, THE ENTIRE LIABILITY OF CONTRACTOR AND ITS AFFILIATES FOR DAMAGES FROM ANY CAUSE WHATSOEVER WILL NOT EXCEED THE DOLLAR AMOUNT PAID BY CITY FOR THE PRODUCT(S) OR SERVICE(S) GIVING RISE TO THE CLAIM.

Warranty
All warranties originate from the manufacturer, NetApp, and are subject to the limitations of NetApp and not Contractor, a copy of which is attached hereto as Exhibit A. CONTRACTOR AND ITS AFFILIATES HEREBY EXPRESSLY DISCLAIM ALL WARRANTIES EITHER EXPRESS OR IMPLIED, RELATED TO PRODUCTS, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF TITLE, ACCURACY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WARRANTY OF NONINFRINGEMENT, OR ANY WARRANTY RELATING TO THIRD PARTY SERVICES. THE DISCLAIMER CONTAINED IN THIS PARAGRAPH DOES NOT AFFECT THE TERMS OF ANY MANUFACTURER'S WARRANTY.

In the case of the services performed in a SOW, Contractor warrants that it will perform such services in a good and workmanlike manner. City's sole and exclusive remedy with respect to this warranty will be, at the sole option of Contractor, to either (a) use its reasonable commercial efforts to reperform any services not in substantial compliance with this warranty, or (b) refund amounts paid by the City related to the portion of the services

not in substantial compliance; provided, in each case, City notifies Contractor in writing within five (5) business days after performance of the applicable services.

II.   Information for Offerors and Proposal

§7.1.6   The BWC portion includes two phases:

Phase A: Includes the design of Tier-1 and Tier-3 storage for the entire BWC program, and the acquisition and installation of a portion of Tier-1 storage and Tier-3 storage for calendar year 2017. Phase A will also include moving BWC video files from the city's existing storage array to the newly acquired video array. 3.6. The City shall be solely responsible for daily back-up and other protection of its data and software against loss, damage or corruption during the performance of Services and for any necessary reconstruction thereof.

§7.2.4
The City desires a resilient and redundant storage solution for Tier 3 storage. This RFP includes two phases:

Phase A: Includes the design of Tier-3 storage for the entire DC program, and the acquisition and installation of a portion ofTier-3 storage for calendar year 2017. Phase A will also include moving DC video files from the city's existing storage array. The City shall be solely responsible for daily back-up and other protection of its data and software against loss, damage or corruption during the performance of Services and for any necessary reconstruction thereof.

Dated the 8 day of May, 2017, to the
Award Agreement
Between CDW Government LLC,
and City of Columbus, Ohio

NetApp's Warranty Policy

City may obtain NetApp's current warranty policy on NetApp's websites indicated below or contact NetApp Technical Support at 888.4.NETAPP or mysupport.netapp.com. Warranty terms are subject to change.

Warranty/Extended Warranty Hardware:

http://www.netapp.com/us/media/extended-warranty-hardware-support-product-description.pdf

NetApp Premium Support:

http://www.netapp.com/us/media/supportedge-premium-product-description.pdf

NetApp Software Support:

http://www.netapp.com/us/media/software-support-plan-product-description.pdf

City of Columbus

Legislation Report

Office of City Clerk
90 West Broad Street
Columbus OH 43215-9015
columbuscitycouncil.org

File Number: 1094-2017

Emergency

File ID:	1094-2017	**Type:**	Ordinance	**Status:**	Passed
Version:	1	***Committee:**	Public Safety Committee		
File Name:	Video Storage UTC			**File Created:**	04/18/2017
				Final Action:	05/04/2017

Auditor Cert #: ACPO00168
0

Auditor: When assigned an Auditor Certificate Number I , the City Auditor, hereby certify that there is in the treasury, or anticipate to come into the treasury, and not appropriated for any other purpose, the amount of money specified hereon, to pay the within Ordinance.

Contact Name/No.: A. Beasley 5-2686

Floor Action (Clerk's Office Only)

Mayor's Action

Council Action

Mayor	Date	Date Passed/ Adopted	President of Council
Veto	Date		City Clerk

Title: To authorize the Finance and Management Director to enter into a contract with CDW Government, LLC for the option to purchase Video Storage Equipment to be used by the Division of Police, as well as associated accessories, software, maintenance, and support; to waive the competitive bidding requirement of City Code Chapter 329; to authorize the expenditure of $1.00 to establish the contract from the General Fund; and to declare an emergency. ($1.00)

Sponsors: Mitchell J. Brown and Zach M. Klein

Attachments: 1094-2017 Appropriation Authorization,
1094-2017 Bid Waiver

History of Legislative File

Ver.	Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:
1	Columbus City Council	05/01/2017	Approved				Pass
1	COUNCIL PRESIDENT	05/01/2017	Signed				
1	MAYOR	05/03/2017	Signed				
1	CITY CLERK	05/04/2017	Attest				

EBOCO: Following review and approval, when required, the Equal Business Opportunity Commission Office certifies compliance with Title 39 as of date listed.

City Attorney: Following review and approval, when required, this ordinance has been reviewed by the City Attorney's Office as to its form and legality only.

Explanation

Background: This legislation authorizes the Finance and Management Director to enter into an Universal Term Contract (UTC) for Video Storage Equipment, maintenance and support for the Division of Police with CDW Government, LLC. Video Storage products and services will be utilized by law enforcement to preserve video evidence from crime scenes and other public interactions. The term of the proposed option contract is for three (3) years from the contract execution. The contract may be extended for up to two additional one (1) year periods, subject to mutual agreement by both parties.
Bid Information: RFQ004361 was advertised and Request For Proposals were received on March 9, 2017. Eight (8) responses were received.
An evaluation committee consisted of representatives from Departments of Technology, Public Safety and Finance and Management. Of the eight (8) vendors that submitted proposals, four (4) finalists were selected for further evaluation and scoring. The finalists were invited to present their solutions and to answer questions. After review of the evaluation committee's work, the Directors of Finance and Management, Public Safety and Technology recommend acceptance of the proposal submitted by CDW Government, LLC.
A waiver of the Columbus City Codes is being requested as the current City Code does not provide an RFP process for other than professional services.
The vendor recommendation award to: CDW Government, LLC; Vendor Account # 007352.
Total Estimated five year expenditure: $2,113,053.78
This company is not debarred according to the Excluded Party Listing System of the Federal Government or prohibited from being awarded a contract according to the Auditor of State Unresolved Findings for Recovery Certified Search.
Emergency action is requested so that Video Storage can be ready and available in time for further deployment of the body worn cameras utilized by the Division of Police. This will have a direct effect on the security and safety of civilians and police officers of the City of Columbus.
Fiscal Impact: Funding to establish this $1 option contract is from the General Fund. City agencies will be required to obtain approval to expend from their own appropriations for their estimated annual

expenditures.

Title

To authorize the Finance and Management Director to enter into a contract with CDW Government, LLC for the option to purchase Video Storage Equipment to be used by the Division of Police, as well as associated accessories, software, maintenance, and support; to waive the competitive bidding requirement of City Code Chapter 329; to authorize the expenditure of $1.00 to establish the contract from the General Fund; and to declare an emergency. ($1.00)

Body

WHEREAS, there is a need to purchase Video Storage for the Division of Police; and

WHEREAS, the Purchasing Office advertised and solicited proposals; and

WHEREAS, after review the Directors of Finance and Management, Public Safety and Technology recommend acceptance of the proposal submitted by CDW Government, LLC; and

WHEREAS, this ordinance requests a waiver of applicable competitive bidding requirements of Chapter 329 of the City Code because the City Code does not provide for a Request For Proposal (RFP) process for goods; and

WHEREAS, this ordinance addresses Purchasing objectives of 1) maximizing the use of City resources by obtaining optimal products/services at low prices and 2) encouraging economic development by improving access to City bid opportunities and 3) providing effective option contracts for City agencies to efficiently maintain their supply chain and service to the public; and

WHEREAS, an emergency exists in the usual daily operation of the Department of Public Safety, Division of Police, in that it is immediately necessary to authorize the Finance and Management Director to enter into an option contract for the purchase of Video Storage for use by the Division of Police for the immediate preservation of the public health, peace, property, safety and welfare; now, therefore

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBUS:

SECTION 1. That the Finance and Management Director is hereby authorized to establish an option contract for Video Storage with CDW Government, LLC and associated accessories, software, maintenance, and support for the Division of Police in accordance with solicitation RFQ004361 for the term expiring three (3) years from contract execution. The contract may be extended for up to two additional one (1) year periods, subject to mutual agreement by both parties.

CDW Government, LLC, Negotiated Contract, $1.00

SECTION 2. That this Council finds it is in the best interest of the City of Columbus to waive the competitive bidding requirements of Chapter 329 of the City Code.

SECTION 3. That the expenditure of $1.00 is hereby authorized in Fund 1000 General Fund in Object Class 03 Services, Materials and Supplies per the account codes in the attachment of this ordinance.

SECTION 4. That for the reason stated in the preamble hereto, which is hereby made a part hereof, this ordinance is hereby declared to be and emergency measure and shall take effect and be in force from and after its passage and approval by the Mayor or ten days after passage if the Mayor neither approves nor vetoes the same.