



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 9

List View

General Information | Contact | Default Values | Discount | Document Information

Procurement Folder: 689579

SO Doc Code: CRFQ

Procurement Type: Central Contract - Fixed Amt

SO Dept: 0313

Vendor ID: VS0000018125

SO Doc ID: DEP2000000022

Legal Name: AHEAD LLC

Published Date: 4/28/20

Alias/DBA:

Close Date: 5/14/20

Total Bid: \$302,655.78

Close Time: 13:30

Response Date: 05/14/2020

Status: Closed

Response Time: 13:29

Solicitation Description: Addendum 3 - Storage Area
Network Hardware and Services

Total of Header Attachments: 9

Total of All Attachments: 9



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Solicitation Response**

Proc Folder : 689579

Solicitation Description : Addendum 3 - Storage Area Network Hardware and Services

Proc Type : Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation Response	Version
	2020-05-14 13:30:00	SR 0313 ESR05142000000006688	1

VENDOR
VS0000018125 AHEAD LLC

Solicitation Number: CRFQ 0313 DEP2000000022

Total Bid : \$302,655.78 **Response Date:** 2020-05-14 **Response Time:** 13:29:50

Comments:

FOR INFORMATION CONTACT THE BUYER
 Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature on File	FEIN #	DATE
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All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Storage Area Network Hardware and Services				\$247,563.78

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description : Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

Comments: We are submitting an alternate spec, however the checkbox to the left is not working.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Support for storage array - renewal for year two (2) support				\$18,364.00

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description : Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

Comments: We are submitting an alternate spec, however the checkbox to the left is not working.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Support for storage array-renewal for year three (3) support				\$18,364.00

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description : Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

Comments: We are submitting an alternate spec, however the checkbox to the left is not working.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Support for storage array- renewal for year four (4) support				\$18,364.00

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :	Support for storage array, 24x7 remote and on-site support renewal for year four (4) support
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Comments: We are submitting an alternate spec, however the checkbox to the left is not working.



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-03-30	2020-04-16 13:30:00	CRFQ 0313 DEP2000000022	1

BID RECEIVING LOCATION

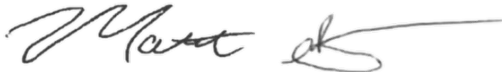
BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 Ahead
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X  FEIN # 20-8476250 DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601 per the bid requirements, specifications, and terms and conditions as attached hereto.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services				

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
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Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

DEP2000000022	Document Phase Final	Document Description Storage Area Network Hardware and Services	Page 4 of 4
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-03-30	2020-04-16 13:30:00	CRFQ 0313 DEP2000000022	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

AHEAD, LLC
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X

FEIN # 20-8476250

DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

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(WV DEP Storage area Network Hardware and services Project)**

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ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
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Comm Code	Manufacturer	Specification	Model #
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Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support				

Comm Code	Manufacturer	Specification	Model #
58112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
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Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :
Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

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Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :
Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

A pre-bid meeting will not be held prior to bid opening

A MANDATORY PRE-BID meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: April 7th, 2020 at 9:00 AM. ET.

Submit Questions to: Guy Nisbet
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)
Email: Guy.L.Nisbet@WV.Gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID: DEP Storage area Network Hardware and Services
BUYER: Guy Nisbet
SOLICITATION NO.:
BID OPENING DATE:
BID OPENING TIME: 1:30 PM. ET.
FAX NUMBER: 304.558.3970

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression or Interest or Request for Proposal is not permitted in wvOASIS.

For Request For Proposal ("RFP") Responses Only: In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus N/A convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: (This only applies to CRFP)

Technical

Cost

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: April 16th, 2020 at 1:30 PM. ET.

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the

equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:

<http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: <http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or

minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance.”

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b.”

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor’s entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled “confidential,” “proprietary,” “trade secret,” “private,” or labeled with any other claim against public disclosure of the documents, to include any “trade secrets” as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. INTERESTED PARTY DISCLOSURE: West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least \$1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

23. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

GENERAL TERMS AND CONDITIONS:

1. **CONTRACTUAL AGREEMENT:** Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. **DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.
 - 2.1. **"Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

 - 2.2. **"Bid" or "Proposal"** means the vendors submitted response to this solicitation.

 - 2.3. **"Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

 - 2.4. **"Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.

 - 2.5. **"Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.

 - 2.6. **"Award Document"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

 - 2.7. **"Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

 - 2.8. **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

 - 2.9. **"Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

Term Contract

Initial Contract Term: **Initial Contract Term:** This Contract becomes effective on _____ and extends for a period of _____ year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Alternate Renewal Term – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ days.

Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within Sixty (60) calendar days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for Three (3) year(s) thereafter.

One Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

Other: See attached.

4. NOTICE TO PROCEED: Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

Open End Contract: Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.

Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

One Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

BID BOND (Construction Only): Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

PERFORMANCE BOND: The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

LABOR/MATERIAL PAYMENT BOND: The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

MAINTENANCE BOND: The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

Commercial General Liability Insurance in at least an amount of: \$1,000,000.00 per occurrence.

Automobile Liability Insurance in at least an amount of: \$500,000.00 per occurrence.

Professional/Malpractice/Errors and Omission Insurance in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

Commercial Crime and Third Party Fidelity Insurance in an amount of: _____ per occurrence.

Cyber Liability Insurance in an amount of: _____ per occurrence.

Builders Risk Insurance in an amount equal to 100% of the amount of the Contract.

Pollution Insurance in an amount of: _____ per occurrence.

Aircraft Liability in an amount of: _____ per occurrence.

Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

9. WORKERS' COMPENSATION INSURANCE: The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. [Reserved]

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

_____ for _____

Liquidated Damages Contained in the Specifications

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

- 16. TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
- 17. ADDITIONAL FEES:** Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.
- 18. FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.
- 19. CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.
- 20. TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.
- 21. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.
- 22. COMPLIANCE WITH LAWS:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.
- SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.
- 23. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

- 24. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.
- 25. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
- 26. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
- 27. ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.
- 28. WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
- 29. STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
- 30. PRIVACY, SECURITY, AND CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. PURCHASING AFFIDAVIT: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE: This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"), provided that both the Other Government Entity and the Vendor agree. Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

39. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

40. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.requisitions@wv.gov.

41. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

42. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
 - c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
 - d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

43. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a

“substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

44. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

45. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide *new*, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.



(Name, Title)

Mike Armbrust, Managing Director

(Printed Name and Title)

5181 Natorp Blvd, Suite 110, Mason, OH 45040

(Address)

330-338-5216

(Phone Number) / (Fax Number)

mike.armbrust@thinkahead.com

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Ahead

(Company)



(Authorized Signature) (Representative Name, Title)

Mike Armbrust, Managing Director

(Printed Name and Title of Authorized Representative)

14 May 2020

(Date)

330-338-5216

(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input checked="" type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Ahead

Company _____



Authorized Signature _____

14 May 2020

Date _____

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

CURRENT ENVIRONMENT: The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601. The Charleston site has a computer room with several racks of equipment. *The existing Storage System is an EMC VNX 5300 OEM S/N APM00120601959.*

2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

2.1 **“Contract Services”** means Storage Area Network Hardware and Services as more fully described in these specifications.

2.2 **“Pricing Page”** means the pages, contained wvOASIS or attached hereto as **Exhibit A**, upon which Vendor should list its proposed price for the Contract Services.

2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.4 **“Array”** means a disk array or solid-state disk (SSD), a hardware element that contains a large group of disk drives (HDDs). It may contain several disk drive trays and has an architecture which improves speed and increases data protection. The system is run via a storage controller, which coordinates activity within the unit.

2.5 **“RAID”** means (Redundant Array of Inexpensive Disks or Drives, or Redundant Array of Independent Disks) is a data storage virtualization technology that combines multiple physical disk drive components into one or more logical units for the purposes of data redundancy, performance improvement, or both.

2.6 **“NAS”** means a file-level (as opposed to block-level) computer data storage server connected to a computer network providing data access to a heterogeneous group of clients. NAS is specialized for serving files either by its hardware, software, or configuration. It is often manufactured as a computer appliance – a purpose-built specialized computer. NAS systems are networked appliances which contain one or more storage drives, often arranged into logical, redundant storage containers or RAID. Network-attached storage removes the responsibility of file serving from other servers on the network.

REQUEST FOR QUOTATION
Storage Area Network Hardware and Services

- 2.7 "SAN"** means a storage area network or storage network is a computer network which provides access to consolidated, block-level data storage. SANs are primarily used to enhance accessibility of storage devices, such as disk arrays and tape libraries, to servers so that the devices appear to the operating system as locally attached devices. A SAN typically is a dedicated network of storage devices not accessible through the local area network (LAN) by other devices, thereby preventing interference of LAN traffic in data transfer.
- 2.8 "Block"** means block devices that provide buffered access to hardware devices and provide some abstraction from their specifics. Unlike character devices, block devices will always allow the programmer to read or write a block of any size (including single characters/bytes) and any alignment.
- 2.9 "AFF"** means All Flash FAS a proprietary term of NetApp. NetApp offers all-flash FAS storage arrays that can be deployed as part of a unified scale-out architecture and that benefit from the industry-leading data management features of the Data ONTAP® operating system.
- 2.10 "A220"** means a model of a NetApp appliance.
- 2.11 "GHz"** means gigahertz a unit of measurement for AC (alternating current) or EM (electromagnetic) wave frequencies equal to 1,000,000,000 (one billion) Hz (hertz).
- 2.12 "CPU"** means a central processing unit (CPU), also called a central processor or main processor, is the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logic, controlling, and input/output (I/O) operations specified by the instructions.
- 2.13 "SSD"** means a solid-state drive (SSD) is a solid-state storage device that uses integrated circuit assemblies as memory to store data persistently, typically using flash memory. It is also sometimes called a solid-state device or a solid-state disk, although SSDs lack the physical spinning disks and movable read-write heads used by the conventional electromechanical storage such as hard drives ("HDD") or floppy disks.
- 2.14 "SAS"** Means serial attached storage. SAS is a software suite that can mine, alter, manage and retrieve data from a variety of sources and perform statistical analysis on it.
- 2.15 "S3"** a proprietary term means Amazon Simple Storage Service is storage for the Internet. It is designed to make web-scale computing easier for developers. Amazon S3 has a simple web services interface that you can use to store and retrieve any amount of data, at any time, from anywhere on the web.

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- 2.16 **“GB”** means Gigabyte (GB or GByte) is a data measurement unit for digital computer or media storage. One GB equals one billion (1,000,000,000) bytes or one thousand (1,000) megabytes (MB).
- 2.17 **“RJ45”** means a type of connector commonly used for Ethernet networking. It looks like a telephone jack but is slightly wider.
- 2.18 **“SFP+”** means enhanced small form-factor pluggable transceiver a compact, hot-pluggable network interface module used for both telecommunication and data communications applications. The form factor and electrical interface are specified by a multi-source agreement (MSA) under the auspices of the Small Form Factor Committee. It is a popular industry format jointly developed and supported by many network component vendors. Enhanced meaning speeds up to 10 Gbit/s and the SFP28 iteration is designed for speeds of 25 Gbit/s.
- 2.19 **“TiB”** means a tebibyte is a unit of measure used to describe computing capacity. The prefix tib comes from the binary system for measuring data capacity. That system is based on powers of two. One tebibyte equals 2⁴⁰ or 1,099,511,627,776 bytes.
- 2.20 **“RAW”** means Raw storage is the storage represented by the drives themselves. Usable is what is presented by the RAID controller to the system.
- 2.21 **“iSCSI”** means in computing, is an acronym for Internet Small Computer Systems Interface, an Internet Protocol (IP)-based storage networking standard for linking data storage facilities. It provides block-level access to storage devices by carrying SCSI commands over a TCP/IP network.
- 2.22 **“CIFS/SMB”** SMB was the predecessor to CIFS. SMB "server message block" and CIFS "common internet file system" are protocols. Samba implements CIFS network protocol. This is what allows Samba to communicate with (newer) MS Windows systems.
- 2.23 **“Samba”** There are two parts to Samba, one being the server which shares out files and printers for other PC's to use, and the other being the client utilities, which allows a UNIX system to access files and printers on other Windows or Samba servers.
- 2.24 **“NFS”** means Network File System is a distributed file system protocol originally developed by Sun Microsystems in 1984,[1] allowing a user on a client computer to access files over a computer network much like local storage is accessed.
- 2.25 **“pNFS”** means Parallel NFS (pNFS) is a part of the NFS v4.1 standard that allows compute clients to access storage devices directly and in parallel.

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- 2.26 “API”** means a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.
- 2.27 “VAAI”** means a proprietary term VMware vSphere Storage APIs “Array Integration (VAAI), also referred to as hardware acceleration or hardware offload APIs, are a set of APIs to enable communication between VMware vSphere ESXi hosts and storage devices.
- 2.28 “ODX”** means a proprietary term Offloaded Data Transfer (ODX) is a feature that was added to Windows Server 2012 and later versions to enhance the performance of compatible storage area networks (SANs). Similar to vStorage APIs for array Integration (VAAI) in VMware, ODX speeds up the movement and creation of blocks and files, which makes it a great feature to have in a virtualized environment. In this article, I will explain ODX, the system requirements, and an unfortunate issue that many SAN customers have experienced.
- 2.29 “NIC”** means a network interface card (NIC) is a hardware component, typically a circuit board or chip, which is installed on a computer so that it can connect to a network.
- 2.30 “C20”** means 20A Power Cable for Network Devices That Require a Heavy-Gauge Connection. This heavy-duty extension cord features 12 AWG wire suitable for high power connections, making it a reliable solution for large server applications that require a higher-rated, heavier-gauge cable.
- 2.31 “PDU”** means a power distribution unit or mains distribution unit (MDU) is a device fitted with multiple outputs designed to distribute electric power, especially to racks of computers and networking equipment located within a data center. Data centers face challenges in power protection and management solutions. Therefore, many data centers rely on PDU monitoring to improve efficiency, uptime, and growth.
- 2.32 “WVDEP”** West Virginia Department of Environmental Protection.
- 2.33 “LUNs”** Stands for "Logical Unit Number. LUNs are used to identify SCSI devices, such as external hard drives, connected to a computer. Each device is assigned a LUN number, which serves as the device's unique address.
- 2.34 “Cluster”** - is a group of servers and other resources that act like a single system and enable high availability and, in some cases, load balancing and parallel processing.
- 2.35 “Hypervisor”** - is a computer software, firmware or hardware that creates and runs virtual machines. A computer on which a hypervisor runs one or more virtual machines is called a host machine, and each virtual machine is called a guest machine. The hypervisor presents the guest operating systems with a virtual operating platform and manages the execution of the guest operating systems.

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- 2.36 "Controller"** - is a device that controls storage arrays, and mainly comprises the three types of components—"CPU" (central processing unit), "cache memory" and "connection interface with the network and memory devices." It is otherwise called "storage processor" or "array controller," among other names.
- 2.37 "Working Alongside"** – means either in close physical proximity or through web conferencing with two or more people cooperatively and collaboratively to perform necessary work identified in this.
- 2.38 "Migration"** – means copying all data from the existing systems to the new storage system.
- 2.39 "Terabyte"** – is a multiple of the unit byte for digital information. The prefix tera represents the fourth power of 1000 and means 10^{12} in the International System of Units (SI), and therefore one terabyte is one trillion (short scale) bytes. The unit symbol for the terabyte is TB.
- 3. QUALIFICATIONS:** Vendor, or Vendor's staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:
- 3.1** All professional services must be performed by the employees of the awarded vendor or equipment manufacturer.
- 3.2** Professional services are to be coordinated via a single point of contact, either a dedicated project manager or lead technical resource is acceptable. Individual to be identified prior to beginning Project.
- 3.3** All professional services personnel must have a minimum of three (3) years of experience with NetappAFF and Netapp FAS.
- 3.4** Vendor should provide with their bid response or prior to award any certifications and resume for the project staff who will be assigned to the project.
- 3.5** The awarded vendor must be able to aid in cases where there may be a language barrier.
- *Compliance will be determined prior to contract award by the State through documentation provided by the Vendor with its bid or upon request, Vendor must provide any documentation requested by the State to assist in confirmation of compliance*

4. MANDATORY REQUIREMENTS:

4.1 Mandatory Contract Services Requirements and Deliverables: Contract Services must meet or exceed the mandatory requirements listed below.

4.1.1 Professional Services:

4.1.1.1 All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete this solicitation) must be bid as a lump sum price.

4.1.1.2 Project planning meetings may be held via conference call, in person or web conferencing sessions. A minimum of three (3) meetings prior to commencement of installation.

4.1.1.3 Any required/included project management functions can be performed offsite/remotely.

4.1.1.4 The professional services price must be all inclusive; no separate fees will be allowed.

4.1.1.5 Implementation/Migration Services Phase: This section outlines the minimum tasks that the successful vendor will be required to perform as part of the Implementation/Migration Phase of the project at both the Charleston and Logan WV sites.

4.1.1.5.1 Assist the WVDEP in connecting and configuring the network switching hardware to the existing WVDEP core router(s) at both data centers.

4.1.1.5.2 Work with the WVDEP to configure the storage array at both Charleston and Logan locations to meet the needs of the WVDEP. This configuration will closely mirror the configuration of the existing storage arrays and should consist of the following:

4.1.1.5.2.1 The vendor must perform the set-up of a single storage pool on the production array providing the total useable capacity of the hard disk drives in the storage array at the production data center including performance

acceleration provided by the flash drives included in the production array.

- 4.1.1.5.2.2** The vendor must perform the set-up of a primary storage pool on the Logan site backup array providing the same useable capacity as the storage pool configured on the production array.
 - 4.1.1.5.2.3** The vendor must perform the set-up of a secondary storage pool on the Logan site backup array providing the remaining useable capacity of the drives in the offsite backup array for use as backup storage.
 - 4.1.1.5.2.4** The vendor must perform configuration of asynchronous replication between the existing production array and the new production array for NAS (File) storage to prepare for cutover of file share access to the new production array.
 - 4.1.1.5.2.5** The vendor must perform configuration of replication of one SAN (Block) storage volume from the existing production array to the new production array.
 - 4.1.1.5.2.6** The vendor must perform configuration of replication between the new production array and new Logan site backup array for NAS (File) storage.
 - 4.1.1.5.2.7** The vendor must perform configuration of the storage arrays and the switching hardware to allow new compute resources (servers) at both locations to access the storage arrays at the same location.
- 4.1.1.6** Assist the WVDEP with the migration of the NAS (File) storage and file share access, approximately sixty (60) terabytes, from the old production array to the new production array. This process should be as seamless to the end user as possible and done with no (or very minimal) downtime.
Downtime restricted to the hours of 6:00pm ET to 7:00am ET, Monday through Friday and any time on the weekend.

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- 4.1.1.7** Assist the WVDEP with the installation of the hypervisor software (Red Hat Virtualization Hypervisors and Xen Hypervisors and management systems) on the server hardware at each location. Configuration must include clustering, configuration of converged networking, attaching and configuring LUNs/volumes from the storage array to the servers and the installation and configuration of management tools (Red Hat Virtualization Hypervisors and Xen Hypervisors and management systems). The clusters will be configured as follows:
- 4.1.1.7.1** One (1) 3-node cluster at the production site to run production workloads.
 - 4.1.1.7.2** One (1) 2-node cluster at the production site to run development/test workloads.
 - 4.1.1.7.3** One (1) 3-node cluster at the Logan site to run production workloads that reside at the Logan backup site and serve as the replication target for the production cluster.
- 4.1.1.8** The hardware installation and the commencement of the data migration must be completed within sixty (60) days after the solicitation is awarded.
- 4.1.2 Storage Array Solution for both, Charleston and Logan WV sites:** Prior to award, vendors that are providing “or equal” equipment must provide a listing of all equipment proposed to complete this solicitation for evaluation to determine if the bid meets specifications.
- 4.1.2.1** The following minimum requirements are based on a NetApp storage array or equal. The technical aspects listed below are required to fulfill the current needs of the WVDEP.
- 4.1.2.1.1** Must provide dual storage controllers that function as a highly available clustered pair and they must have the following minimum specifications.
 - 4.1.2.1.1.1** 64 GB of RAM.
 - 4.1.2.1.1.2** 8GB of NVRAM.
 - 4.1.2.1.1.3** 1 x RJ45 10gb Ethernet ports.
 - 4.1.2.1.1.4** 2 x SFP+ 10gb Ethernet ports.
 - 4.1.2.1.1.5** 2 x 12gb SAS ports.

4.1.2.1.1.6 2 x 64-bit 12 core intel 1.70GHz CPU.

4.1.2.2 The storage array must have the following minimum storage capacity:

4.1.2.2.1 100 TiB (Tebibyte/Binary Terabytes) of useable formatted flash storage using SSDs. Useable capacity does include dedupe, compression, or other efficiency technologies as guaranteed by vendor or manufacturer.

4.1.2.2.2 Must support clustering with additional controllers with a minimum cluster size of eight (8) or more controllers providing live mobility of storage volumes between controllers with zero downtime.

4.1.2.3 The storage array must provide the following functionality:

4.1.2.3.1 Must provide a single management interface for both block and file storage functionality.

4.1.2.3.2 Must support single, double and triple parity RAID.

4.1.2.3.3 Must support Volume Encryption.

4.1.2.3.4 Must support per volume deduplication that can be enabled or disabled, during and after volume creation.

4.1.2.3.5 Must support per volume compression that can be enabled or disabled, during and after volume creation.

4.1.2.3.6 Must support the ability to natively offload/de-stage cold data to the on and/or off premise private or commercial cloud (S3)

4.1.2.3.7 Must be able to create redirect on write snapshots within the storage array.

4.1.2.3.8 Must support zero downtime firmware and OS upgrades to the storage controllers.

4.1.2.3.9 The storage array must support the following protocols:

- 4.1.2.3.9.1 iSCSI (internet small computer systems interface)
- 4.1.2.3.9.2 NFS (network file system)
- 4.1.2.3.9.3 pNFS (parallel network file system)
- 4.1.2.3.9.4 Must support VAAI extensions when utilized with VMware vSphere virtualization platform.
- 4.1.2.3.9.5 Must support ODX extension when utilized with Microsoft Hyper- V virtualization platform.
- 4.1.2.3.10 The storage array must support at a minimum, the following operating systems: Windows Server 2008, Windows Server 2012, Windows Server 2016, Xen Hypervisor and Red Hat Virtualization Hypervisor.
- 4.1.2.3.11 The storage array must support asynchronous replication of individual storage volumes with the existing WVDEP storage array. Note: NetApp storage arrays have native replication support with existing storage array. If bidding an equivalent system from another vendor without native replication support, then the following requirements must also be met:
 - 4.1.2.3.11.1 If native replication with the existing WVDEP storage array is not supported, licenses for any 3rd party software required to replicate individual volumes should be included in the bid response.
 - 4.1.2.3.11.2 If 3rd party software is necessary and required to be run on a server, the bid response must include an appropriately sized server to run the software with at least 2 years of hardware warranty/support for the proposed server.
 - 4.1.2.3.11.3 The NetApp storage arrays on which the storage requirements were based provides native replication

tools for this functionality. Vendor should provide any Software Terms and Conditions that the State or the Agency will be required to review and/or accept as a part of this solicitation with their submitted bid response or prior to award.

4.1.3 Storage Array at the Production Site of Charleston, WV. The following minimum requirements are based on a NetApp AFF (All Flash FAS) A220, or Equal, storage Array.

4.1.3.1 Must support synchronous replication of individual storage volumes with the, offsite backup array included as part of this solicitation.

4.1.3.2 Vendor must include 2 x 64-bit 12-core Intel 1.70 GHz CPU.

4.1.3.3 Vendor must include 4 x SFP+ 10gb Ethernet/16gb FC ports.

4.1.3.4 Must be able to replicate snapshot copies of individual volumes with the Logan site backup array included as part of this solicitation.

4.1.4 The Following Network equipment must be included for connectivity from the storage device. All equipment in this solicitation should work together at full performance and with redundancy.

4.1.4.1 Dual Nexus 3524-XL switches which will provide 24 ports 10Gb SFP+ connectivity.

4.1.4.2 Multimode Fiber which will be used to uplink the switches to the existing network.

4.1.4.3 Vendor must provide PCI-Express card to connect servers to storage network as described below:

4.1.4.3.1 Sixteen Adaptor cards (16) QLogic 57810 Dual Port 10Gb Direct Attach/SFP+ Gigabit PCI-Express®, Low Profile Network Adapter cards or equal.

4.1.4.3.1.1 Adaptor cards must all be PCI-Express® and Low-Profile Network Adaptors.

4.1.4.3.1.2 Adaptor cards must be Dual Port Ethernet.

4.1.4.3.1.3 Adaptor cards must be 10Gb Direct attach/SFP+.

4.1.4.4 Vendor must provide SFP+ Module as described below:

4.1.4.4.1 Cisco Original 10GBase-SR SFP+ Module, SFP-10G-SR 10 Gig Hot Swappable 10GBase-SR SFP+ modules provide 10Gbps or equal.

4.1.4.4.1.1 SFP module must be 10GBase-SR or greater SFP+.

4.1.4.4.1.2 SFP module must be 10 Gig or greater Hot Swappable.

4.1.4.4.1.3 SFTP must provide 10Gbps or greater.

4.1.5 Storage Array Solution for Logan site backup.

The following minimum requirements are based on a NetApp FAS (FlexArray Storage) 8200, or equal, storage array. The technical aspects listed below are required to fulfill the current needs of the WVDEP:

4.1.5.1 Vendor must include 8 x Small Form-Factor Pluggable SFP+ 10gb Ethernet/16gb Fiber Channel FC ports

4.1.5.2 Storage array must have the following minimum storage capacity:

4.1.5.2.1 100 TiB (Tebibyte/Binary Terabytes) of useable formatted flash storage using mini SAS hard drives. Useable capacity does include dedupe, compression, or other efficiency technologies as guaranteed by vendor or manufacture.

4.1.6 Support for Storage Array's at Charleston and Logan, WV sites.

4.1.6.1 Must include 24x7 remote and on-site support for a duration no less than three (3) years from the date of equipment testing and acceptance by the WVDEP.

4.1.6.2 Must adhere to the following support response times:

4.1.6.2.1 Priority 1: Thirty (30) minutes (storage down and unable to serve data or a state of frequent "panic" or "hang" states, or storage performance is degraded to prevent normal business operations).

4.1.6.2.2 Priority 2: Two (2) hours (storage experiencing infrequent,

isolated, or intermittent "panic" or "hang" states, or performance is in a degraded state that still allows normal business operations but is inconsistent or less than optimal state).

- 4.1.6.2.3 Priority 3:** Eight (8) hours (storage experiencing an issue, anomaly, or cosmetic defect that inflicts little or no business impact).
- 4.1.6.2.4 Priority 4:** Twenty-four (24) hours (Normal requests for information regarding installation, configuration, use, and maintenance of the storage system).
- 4.1.6.3** Support for configuration of asynchronous replication between the existing production array and the new production array for NAS (File) storage to prepare for cutover of file share access to the new production array.
Note: If any additional software is needed for this process, the vendor must include licenses of that software that will be retained by the WVDEP as part of their bid response for these services. The NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality.
- 4.1.6.4** Support for configuration of replication of one SAN (Block) storage volume from the existing production array to the new production array.
Note: If any additional software is needed for this process, the vendor must include licenses for that software, which will be retained by the WVDEP as part of their bid response for these services. The NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality.
- 4.1.6.5** Support for configuration of replication between the new production array and new Logan backup array for NAS (File) storage.
- 4.1.6.6** Support for configuration of the storage arrays and the switching hardware to allow new compute resources (blade servers) at both locations to access the storage arrays at the same location.
- 4.1.6.7** Must configure "Call Home" feature, register the solution with vendor support and assist in registration of WVDEP personnel on the support site
- 4.1.6.8** Must include advance hardware replacement. If the original equipment is not returned to the agency, vendor must provide a communication

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regarding the removed item which shall include item name, serial number and/or WVDEP property tag (if applicable).

4.1.7 Knowledge Transfer and Training: This section will outline any training or knowledge transfer required as part of this solicitation. Requirements may vary, based on whether NetApp storage arrays or equal are being provided.

4.1.7.1 All implementation work being performed will be done alongside WVDEP staff and will provide knowledge transfer on all work being performed, no additional knowledge transfer should be required.

4.1.8 Software license and additional equipment:

4.1.8.1 Vendor must include any additional software licenses needed for the process in their bid response. The NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality.

4.1.8.2 All software and software licenses needed for this solicitation must be included with vendors bid. Software licenses will be retained by WVDEP.

4.1.8.3 All cables and connectors to connect all equipment must work together at full speed and with redundancy. The power cables will need to have a C20 end to fit our existing PDUs.

4.1.9. Acceptance: Acceptance shall be defined as successful demonstration and testing of all system requirements, including training, with the ability for all users to navigate and utilize the system to perform their defined roles. The Agency with the Vendor's acceptance will issue a written letter and Change Order request to WV Purchasing Division as formal acceptance of the system. Upon mutual agreement of acceptance by both the Agency and the Vendor the Change Order issued by WV Purchasing Division will start, the first year's maintenance and support,

4.1.10 Maintenance and Support: The second, third, and fourth year's support/maintenance will also be added by subsequent formal change order, upon contract renewal at the end of the prior year's contract period for support/maintenance.

5. CONTRACT AWARD:

5.1 Contract Award: The Contract is intended to provide Agency with a purchase price for the Contract Services. The Contract shall be awarded to the Vendor that provides the Contract Services meeting the required specifications for the lowest overall Total Bid Amount as shown on the Pricing Pages.

5.1.1 Evaluation will be the TOTAL BID AMOUNT for all items requested. The Awarded Contract will be the first (1) year Licenses and Support Services.

5.1.2 Renewal options for the support for years 2, 3, and 4 will be initiated by the Agency, agreed to by the Vendor and Processed by the West Virginia Purchasing Division as Change Orders for subsequent years.

5.2 Pricing Page: Vendor should complete the Pricing Page by entering their pricing information into wvOASIS. Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid being disqualified.

Vendor should type or electronically enter the information into the Pricing Page to prevent errors in the evaluation.

Vendors who wish to respond to a Centralized Request for Quotation (CRFQ) online may submit information through the State's wvOASIS Vendor Self Service (VSS). If unable to respond online, Vendor must submit their Pricing Page with their submitted bid prior to the schedule bid opening date.

Vendor should type or electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document.

- 6. PERFORMANCE:** Vendor and Agency shall agree upon a schedule for performance of Contract Services and Contract Services Deliverables, unless such a schedule is already included herein by Agency. In the event that this Contract is designated as an open-end contract, Vendor shall perform in accordance with the release orders that may be issued against this Contract.
- 7. PAYMENT:** Agency shall pay flat fee, as shown on the Pricing Pages, for all Contract Services performed and accepted under this Contract. Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.
- 8. TRAVEL:** Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel costs may be

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included in the flat fee or hourly rate listed on Vendor's bid, but such costs will not be paid by the Agency separately.

9. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

- 9.1. Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.
- 9.2. Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.
- 9.3. Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.
- 9.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.
- 9.5. Vendor shall inform all staff of Agency's security protocol and procedures.

10. VENDOR DEFAULT:

10.1. The following shall be considered a vendor default under this Contract.

- 10.1.1. Failure to perform Contract Services in accordance with the requirements contained herein.
- 10.1.2. Failure to comply with other specifications and requirements contained herein.
- 10.1.3. Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
- 10.1.4. Failure to remedy deficient performance upon request.

10.2. The following remedies shall be available to Agency upon default.

- 10.2.1. Immediate cancellation of the Contract.
- 10.2.2. Immediate cancellation of one or more release orders issued under this Contract.
- 10.2.3. Any other remedies available in law or equity.

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11. MISCELLANEOUS:

11.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Lee Erwin

Telephone Number: 312-924-4498

Fax Number: 800-294-5141

Email Address: lee.erwin@thinkahead.com

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code §61-5-3*) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ____ day of _____, 20__.

My Commission expires _____, 20__.

AFFIX SEAL HERE

NOTARY PUBLIC _____



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Addendum 1 - Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-04-13	2020-04-23 13:30:00	CRFQ 0313 DEP2000000022	2

BID RECEIVING LOCATION


BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 AHEAD, LLC
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X  FEIN # 20-8476250 DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum

Addendum No.01 issued to publish and distribute the attached information to the vendor community.

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601 per the bid requirements, specifications, and terms and conditions as attached hereto.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services				

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Support for storage array-renewal for year three (3) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Support for storage array- renewal for year four (4) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

DEP2000000022	Document Phase Final	Document Description Addendum 1 - Storage Area Network Hardware and Services	Page 4 of 4
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Addendum 1 - Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-04-13	2020-04-23 13:30:00	CRFQ 0313 DEP2000000022	2

BID RECEIVING LOCATION


BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 Ahead
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X  FEIN # 20-8476250 DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

Addendum

Addendum No.01 issued to publish and distribute the attached information to the vendor community.

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601 per the bid requirements, specifications, and terms and conditions as attached herefo.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services	0.00000			

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Support for storage array-renewal for year three (3) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Support for storage array- renewal for year four (4) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

SOLICITATION NUMBER: CRFQ 0313 DEP2000000022

Addendum Number:

No.01

The purpose of this addendum is to modify the solicitation identified as (“Solicitation”) to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. Bid Opening date was scheduled for: April 16th, 2020 at 1:30 PM. ET.
now scheduled for: April 23rd, 2020 at 1:30 PM. ET.
2. Vendor submitted questions and Agency responses will be posted at a later date.

No other Changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: _____

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input checked="" type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Ahead

Company



Authorized Signature

14 May 2020

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 - Info Technology

Proc Folder: 689579

Doc Description: Addendum 2 - Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-04-20	2020-05-04 13:30:00	CRFQ 0313 DEP2000000022	3

BID RECEIVING LOCATION


BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 Ahead
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X  FEIN# 20-8476250 DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

Addendum

Addendum No.02 issued to publish and distribute the attached information to the vendor community.

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601 per the bid requirements, specifications, and terms and conditions as attached hereto.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services	0.00000			

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Support for storage array-renewal for year three (3) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Support for storage array- renewal for year four (4) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

SOLICITATION NUMBER: CRFQ 0313 DEP2000000022

Addendum Number:

No.02

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. Bid Opening date was scheduled for: April 23rd, 2020 at 1:30 PM. ET.
now scheduled for: May 4th, 2020 at 1:30 PM. ET.
2. Vendor submitted questions and Agency responses will be posted at a later date.

No other Changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: _____

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input checked="" type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Ahead

Company



Authorized Signature

14 May 2020

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Revised 6/8/2012



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Addendum 2 - Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-04-20	2020-05-04 13:30:00	CRFQ 0313 DEP2000000022	3

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

Ahead
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X

FEIN # 20-8476250

DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum

Addendum No.02 issued to publish and distribute the attached information to the vendor community.

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601 per the bid requirements, specifications, and terms and conditions as attached hereto.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services				

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Support for storage array-renewal for year three (3) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Support for storage array- renewal for year four (4) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

DEP2000000022	Document Phase Final	Document Description Addendum 2 - Storage Area Network Hardware and Services	Page 4 of 4
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Addendum 3 - Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2020-04-28	2020-05-14 13:30:00	CRFQ 0313 DEP2000000022	4

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

Ahead
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X

FEIN # 20-8476250

DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum

Addendum No.03 issued to publish and distribute the attached information to the vendor community.

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601 per the bid requirements, specifications, and terms and conditions as attached hereto.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services				

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Support for storage array-renewal for year three (3) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Support for storage array- renewal for year four (4) support				

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

DEP2000000022	Document Phase Final	Document Description Addendum 3 - Storage Area Network Hardware and Services	Page 4 of 4
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 – Info Technology

Proc Folder: 689579

Doc Description: Addendum 3 - Storage Area Network Hardware and Services

Proc Type: Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
2020-04-28	2020-05-14 13:30:00	CRFQ 0313 DEP2000000022	4

RECEIVING LOCATION

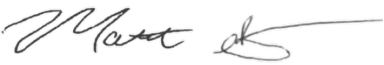
BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 Ahead
 401 N Michigan Avenue, 34th floor
 Chicago, IL 60611
 (312) 924-4492

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

Signature X  FEIN # 20-8476250 DATE 14 May 2020

All offers subject to all terms and conditions contained in this solicitation

Addendum

Addendum No.03 issued to publish and distribute the attached information to the vendor community.

Request for Quotation
(WV DEP Storage area Network Hardware and Services Project)

In accordance with WV Code 5A-3 The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25801 per the bid requirements, specifications, and terms and conditions as attached hereto.

TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Storage Area Network Hardware and Services	0.00000			

Comm Code	Manufacturer	Specification	Model #
43212200			

Extended Description :

Storage Area Network Hardware and Services for Storage Array's for Charleston and Logan. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum. Storage Area Network Hardware, and first (1) year Licenses and Support Services.

TO		SHIP TO	
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US		ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Support for storage array - renewal for year two (2) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year two (2) support

ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US
--	--

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Support for storage array-renewal for year three (3) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year three (3) support

	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ADMINISTRATION 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Support for storage array- renewal for year four (4) support	0.00000			

Comm Code	Manufacturer	Specification	Model #
56112005			

Extended Description :

Support for storage array, 24x7 remote and on-site support renewal for year four (4) support

SOLICITATION NUMBER: CRFQ 0313 DEP2000000022

Addendum Number: No.03

The purpose of this addendum is to modify the solicitation identified as (“Solicitation”) to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. Bid Opening date was scheduled for: May 4th, 2020 at 1:30 PM. ET.
now scheduled for: May 14th, 2020 at 1:30 PM. ET.

2. Vendor submitted Questions and Agency responses.

No other Changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

CRFQ 0313 DEP20*22
Storage Area Network Hardware and Services
Vendor submitted Questions and Agency Responses

- Q.1. What are all EMC models that will be impacted by data migration?
- A. EMC VNX 5300 Serial number APM00120601959
- Q.2. From how many sites will this migration originate? Where are they?
- A. Data for the migration is from one site. 602 57th Street SE Charleston WV, 25309.
- Q.3. Regarding 30-minute Priority 1 response, does this imply via telephone?
- A. A published telephone number that is can take a message or be answered 24 hours per day 7 days per week with a response within 30 minutes.
- Q.4. Please verify that FAS 8200 is desired for backup location; this is Larger than production FAS; is this correct? Would other suggestions be considered?
- A. Yes, that is correct. Yes, alternative equipment may be bid if it meets the requirements.
- Q.5. Are you asking us to bid servers, or just items to install in servers? Either way we need more information on the server configurations.
- A. No servers are to be bid. The Adaptor cards for servers will be installed by DEP server administrators. This is in reference to "QLogic 57810 Dual Port 10Gb Direct Attach/SFP+ Gigabit PCI-Express®, Low Profile Network Adapter or equal".
- Q.6. The NetApp systems don't function the same way a Dell EMC VNX does. As such, you wouldn't configure one large storage pool (ref: 4.1.1.5.2.1) on the NetApp system. There are no pools. Only aggregates and volumes.
- A. The specifications meet the agency needs.
- Q.7. Are you requesting a NetApp A220 with 100TB of SSD drives and a FAS8200 with 100TB of SSD drives (usable)? (ref:4.1.1.5.2.2; 4.1.1.5.2.3; 4.1.2.2.1)
- A. The A220 is an all flash array, we want all flash storage in it. The FAS8200 is a hybrid array, a combination of spinning disk and flash to achieve 100tb is acceptable.
- Q.8. Based on your applications that would reside on the storage systems, we can configure the 100TB to create specific aggregates - is this what you are requesting?
- A. Yes, we expect an effective redundancy of RAID 6.

Q.9. Migration from a Dell EMC VNX5300 to NetApp A220 cannot be achieved at the storage array level. (ref: 4.1.1.5.2.5 and 4.1.1.5.2.5) It requires a host-based replication solution. This would traditionally be done through the hypervisor and some agnostic software like veeam.

A. The agency has Veeam.

Q.10. How many physical servers are connected to the production storage? Model? How many virtual?

A. Servers are already here and not part of the bidding requirements however We have 8 DELL hypervisor hosts which has 75 VM's on it.

Q.11. Are you asking the vendor to provide the virtualization software? Which manufacturer? What version? (ref:4.1.1.5.2.4; 4.1.1.5.2.5; 4.1.1.6; 4.1.2.3.11) Please confirm if this licensing has already been purchased by WVDEP.

A. NO. We have our virtualization system and it is Red Hat Enterprise Virtualization.

Q.12. If the answer to question #6 is yes, we will send additional questions.

A. Should be good.

Q.13 Do you require 2 x CISCO Nexus 3524-XL switches at each site...total 4 switches? (ref: 4.1.4.1)

A. No, The SAN switches are for HQ. Logan is just the replication site and won't have any servers connected to it.

Q.14. Please provide the quantity of the CISCO sfp's (SFP-10G-SR) (ref:4.1.4.4.1)

A. This is a requirement for the vendor to determine. You have all the needed information including the interface cards that go into the host servers.

Q.15. What is the current production SAN switching? Brand, model, # ports available?

A. They are fiber attached; we don't have SAN switching.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input checked="" type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Ahead

 Company



 Authorized Signature

14 May 2020

 Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

Revised 6/8/2012



AHEAD

DEP2000000022

Storage Area Network Hardware & Services

Contact:

Matt Athey, Client Director

614.354.5892

Matt.Athey@ThinkAHEAD.com

A handwritten signature in black ink, appearing to read "Matt Athey".

May 14, 2020

AHEAD

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Legal notice

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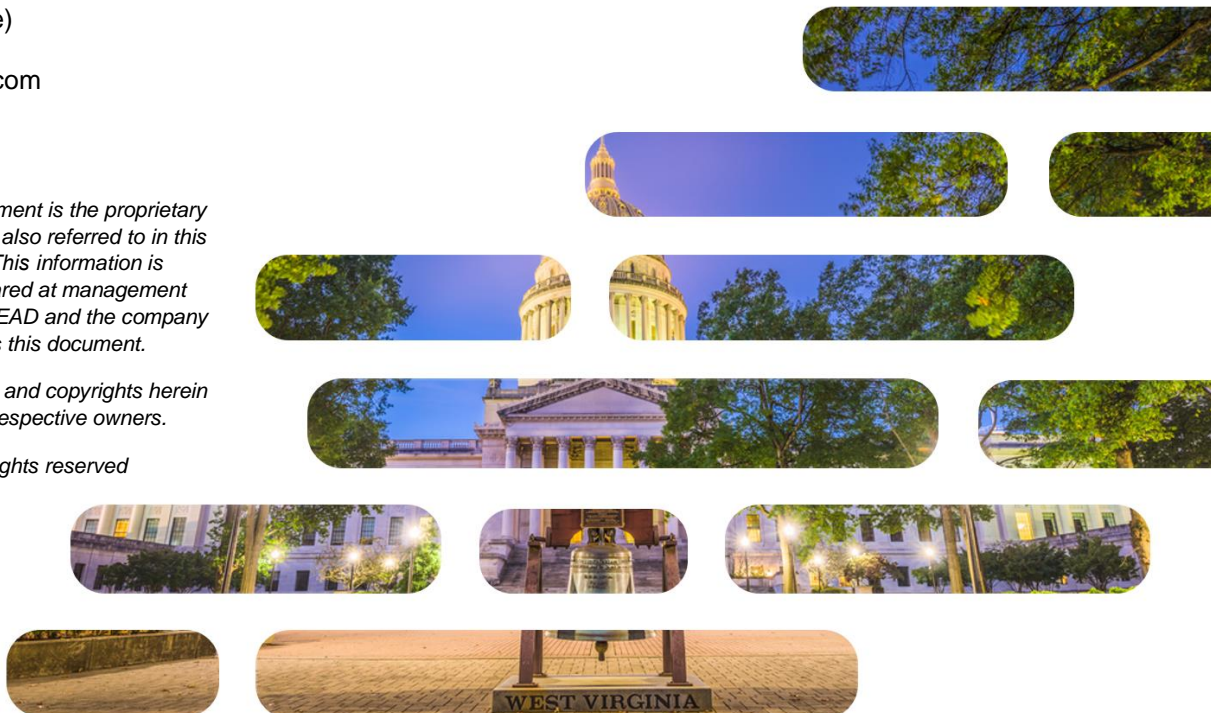




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RFP Response Contact Information

Primary Contact

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Office Main Number	513.457.7855

Storage Area Network Hardware & Services

1. Executive Summary

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for Storage Area Network Hardware and Services.

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup).

All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services and any additional equipment needed to complete with this solicitation) must be bid as a lump sum.

AHEAD recommends refreshing WVDEP's current VNX storage solution with a simple and affordable unified storage solution that is designed for high performance and low latency with the ability to simultaneously run mixed application workloads, process inline data reduction, and provide data services with no performance overhead.

The Dell EMC Unity XT platform sets new standards for storage with compelling simplicity, modern design, flexible deployments, and affordable prices – to meet the needs of resource-constrained IT professionals in large or small companies. Designed and optimized for all-flash, with all-inclusive software, this new and modern hardware platform delivers 8x more performance and a fraction of the latency than your current generation storage array making them a perfect fit for running your business applications wherever they are located, delivering consistent performance with low response times.

2. Why AHEAD for Client Name

2.1. About AHEAD

AHEAD Inc. is a limited liability corporation established in 2007 and incorporated in Illinois. AHEAD currently employs 600+ professionals and continues to grow rapidly.

AHEAD has hubs in Chicago, IL; Atlanta, GA; and Nashville, TN. Other locations include Birmingham, AL; Norcross, GA; Oak Brook, IL; Indianapolis, IN; Boston, MA; Detroit, MI; Minneapolis, MN; New York, NY; Charlotte, NC; Raleigh, NC; Cincinnati, OH; Columbus, OH; Memphis, TN; Dallas, TX; Madison, WI; Milwaukee, WI.

AHEAD builds platforms for digital businesses. By stitching together advances in cloud infrastructure, software delivery, automation and analytics, we help large enterprises deliver on the promise of digital transformation.

2.2. What We Do

We build platforms for digital business.

A lot of organizations are stuck when it comes to transformation, because they haven't put the right foundation in place to support change. We aim to propel your transformation forward by doing the following things exceptionally well.

We Engineer Enterprise Cloud Infrastructure

We modernize infrastructure – helping architect, migrate, and deploy workloads across public clouds, data centers, and edge locations to meet the digital business needs of our clients. Our approach incorporates a range of technical, operational, and financial capabilities designed to enable our clients to operate with maximum efficiency, security, and reliability.

We Deliver Modern Applications

We deliver better software faster – creating cloud-native applications that drive customer-centric outcomes. Our approach combines culture, tools, and process to continuously deliver software innovation while reducing complexity, and when combined with our Intelligent Operations and Enterprise Cloud capabilities, provides end-to-end solutions for clients.

We Create Intelligent Operations

We help technology organizations run smarter – integrating leading service management, monitoring, and analytics platforms to provide preemptive controls, visibility, and automated remediation. Our approach ultimately delivers material improvements in system performance, user experience, and security across the enterprise cloud.

2.3. How We Do It

AHEAD offers a full complement of services to create and sustain your platform for digital business. From education and strategy development, to complex deployments and ongoing operational management, we've got you covered.

At every stage, we help you:

- Strike a balance between innovation and operational excellence
- Blend technological, operational, and organizational perspectives
- Take a holistic view across your IT infrastructure

Education and Enablement Services

AHEAD offers more than 70 different executive and technical briefings. Your team can use our space to explore new technologies and interact with industry experts, or we can come to your offices. Either way, you stay current on the latest enterprise cloud trends and learn the potential they hold for your business. Our briefing experience typically includes some combination of these experiences:

- Accelerated evaluation process
- Hands-on experience with emerging technologies
- Personalized sandbox environment
- Side-by-side technology comparisons
- Lab demonstrations
- Facilitated discussion of your challenges, requirements, and objectives

Strategy and Roadmap Services

When organizations look to adopt cloud solutions but lack a guiding strategy, delivery suffers and results stall. But with a proper strategy in place, you can drive alignment and achieve success.

Using a workshop-based approach, AHEAD's Strategy and Roadmap offering teaches, unites, and delivers decision makers an actionable strategy and roadmap that incorporates the following:

- Objectives and critical success factors
- Cloud-readiness assessment
- Use case and workload analysis
- Organizational alignment
- Operational models
- Economic analysis
- Billing, including chargeback or showback
- Technology alternatives
- Reference architectures
- Security, governance, and compliance
- Application profiling and rationalization
- Service and business process management

Design and Plan Services

Successful cloud service design is more complex than choosing between technology providers and product features. Architecting the services, you want to deliver with an understanding of the corresponding impact is critical.

AHEAD's Design and Plan offering leverages a collaborative, workshop-based approach to rapidly develop the business, technology, and operational processes required to deliver enterprise cloud services. This includes making key decisions around:

- Application and infrastructure architectures
- Cloud management platform
- Lifecycle management
- DevOps approach
- Blueprints and workflows
- Automation, orchestration, and configuration management
- Service catalog
- Capacity and performance management
- Investment analysis
- Data protection and disaster recovery
- Deployment planning
- Application migration planning

Deployment and Management Services

Whether you are looking to extend or get out of your data center, moving to the cloud will have a significant impact on your business. As with any IT initiative, follow-through and management beyond the initial deployment will help you ensure the success of your cloud platforms.

AHEAD's Deploy and Manage offerings accelerate your adoption of the cloud by leveraging our cloud reference architectures, pre-built IP, best practices, and the deep experience of our experts. We can help you with:

- Service management integration
- Cloud management platform deployment
- Infrastructure deployment
- Configuration management
- Blueprint and workflow development
- Automation and orchestration
- Continuous integration and delivery
- Application migration factory
- Third-party integrations
- Monitoring and log management
- "Day 2" operations
- Ongoing management and optimization
- Training
- Documentation

2.4. How We Think

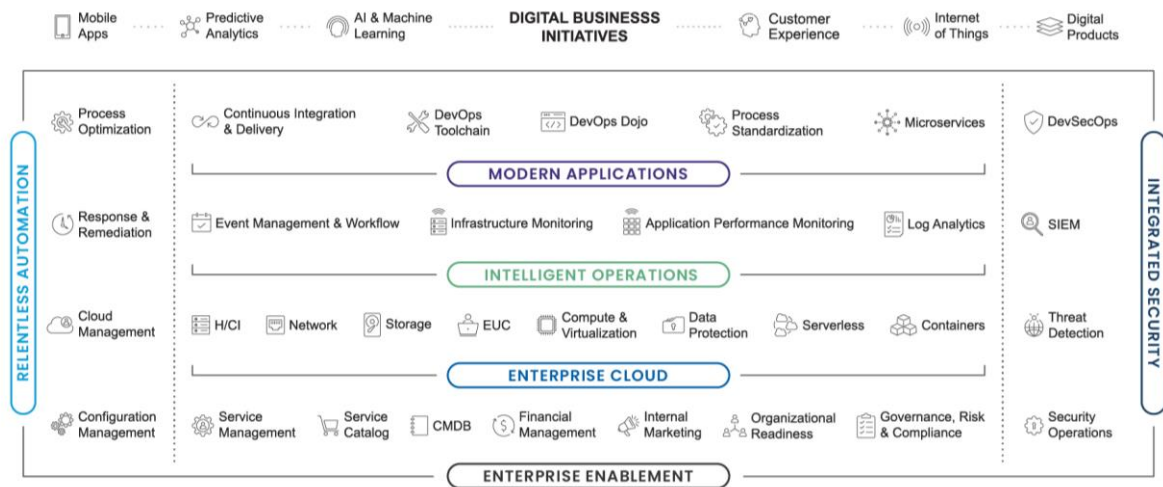
Digital business involves much more than pilots in mobility, artificial intelligence, or IoT. It involves fundamental changes in culture, communications, performance measurement, and

how work gets done. Without a foundation in place to enable all of that change, your digital efforts will stall.

AHEAD Digital Delivery Platform

We created the digital delivery platform to propel your transformation forward. It represents the components required for transformation to take hold in your business and includes a mix of technologies and practices. Consider it a reference architecture to make your own.

AHEAD Digital Delivery Platform[©]



The Five Digital Imperatives

A platform for digital business is comprised of five pillars – we call them imperatives because they’re “must have” not “nice to have.”

Relentless Automation

If you can’t automate it, ask yourself why? Always automate where it makes sense for the business, which in most cases are those hi-frequency, mundane tasks that pull resources away from more impactful work.

Intelligent Operations

Digital requires a whole new level of insights and controls. AIOps may be the ultimate end goal, but there’s a lot of progress to be made today in stitching together monitoring with log analytics, connected to event management and workflow.

Scaled DevOps

A digital business demands better software, faster – but now done at enterprise scale. And where ‘better’ includes more secure software as well.

Integrated Security

Security should be included in every conversation and project – not as roadblocks, but as guardrails that safely allow the business to move faster.

Enterprise Cloud

The IT industry is filled with competing terms – public cloud, private cloud, multi cloud, hybrid cloud, and on. But in reality, there's only your cloud – your enterprise cloud. And for the foreseeable future, that enterprise cloud must be a mixture of on-premises and off-premises tailored to your business.

2.5. Workshops, Briefings, and Lab Access

Our clients want to explore the art of the possible, but they lack the time required to stay current on the latest digital infrastructure technologies and trends. That's why AHEAD has invested so heavily in our briefings center and lab facilities.

Each year we host more than 300 clients to our offices for educational briefings, visioning workshops, and access to our state-of-the-art labs, to explore the possible across all facets of the digital delivery platform, from cloud strategy, to enterprise monitoring and analytics, to security operations, and the latest in data center modernization.

Visioning Workshops

These accelerated assessment and roadmap development sessions are facilitated by AHEAD principal consultants and tailored completely to your requirements. Using AHEAD frameworks as guides, we create a vision realization plan which includes a baseline assessment, high level roadmap, risk mitigation strategies, and critical success factors.

Briefings

Briefings come in two forms: Executive Briefings and Technical Briefings.

In executive briefings, we take an emerging trend and explore how its latest developments stand to affect your company, and more importantly, how you should respond. Our facilitators are experienced practitioners; not academics. They guide the discussion, outline different solution options; and share best practices.

In technical briefings, we provide a deeper examination into one of the many digital technologies that we design and implement with clients; including some of the most cutting-edge technologies just hitting the market. Our engineers review and refine your technology roadmaps and evaluate different technology choices in light of your company's objectives.

Lab Access

Our labs serve as home to the latest digital technologies, so that you can explore their capabilities alongside our certified engineers and architects. Our labs are located in Chicago (at both our HQ and at Equinix), Nashville, and Atlanta. Lab access is designed to meet the following needs:

- New Product Demonstrations, where you get to see certain technologies in action.
- Personal Sandboxes, for deeper exploration and hands-on access for your team.
- Configurations and Upgrades, where we test either processes with you in a safe environment.
- Proof of Concepts, where we actually mimic your workloads.

2.6. Partners, Awards, and Recognition

Selective Partner Program

AHEAD sells, implements, and supports the offerings of more than sixty providers of digital platform technologies, across datacenter infrastructure, public cloud, automation, operations, security, and DevOps.

Strategic Partnerships

- AWS
- Azure
- Cisco
- DellEMC
- ServiceNow
- VMware

Core Partnerships

- AppDynamics
- Arista
- BigPanda
- Bluemedora
- Box
- Carbon Black
- Chef
- Citrix
- CloudBees
- Cloud Checkr
- Cohesity
- Commvault
- Ctera
- Cybereason
- Datadog
- Docker
- Dome9
- DUO
- Equinix
- Expanse
- F5
- GitHub
- HashiCorp
- Hitachi
- Imperva
- Infoblox
- Liquidware
- Nasuni
- NetApp
- Nutanix
- Nvidia
- Okta
- Paloalto Networks
- Proofpoint
- Puppet
- Pure Storage
- Redhat
- Riverbed
- Rubrik
- Splunk
- Sumologic
- Symantec
- Turbonomic
- Varonis
- Vast
- Veeam
- Veritas
- Zerto

Recent Awards and Recognition

2020 VMware Americas Partner of the Year Award for Services Excellence

Recognized for helping our clients maximize the value received from their VMware investments.

2019 Dell Technologies Global Titanium Partner President's Circle Award

Recognized for outstanding achievements based on financial performance over the course of the fiscal year, including revenue growth, storage and services revenue.

2019 Dell Technologies Go Big – Win Big Partner of the Year (Data Center)

Recognized for overall growth of services, storage, new business and marketing excellence.

2018 Puppet Partner Solution of the Year

Recognized for contributions made to drive customer success with automation.

2018 Dell EMC Extraordinary Partner of the Year

Recognized as a top North American partner at Dell Technologies World

2017 Puppet Partner MVP, Americas

Recognized for exemplary performance in innovation/implementation and the contributions made in helping customers accelerate their journey to pervasive automation.

2016 Puppet Platinum Partner of the Year

Recognized for attaining Service Delivery Partnership status, Gold Partner Solution status, and have made automation (via Puppet Enterprise) a core component of their go-to-market strategies for delivering world class solutions.

2016 Puppet Momentum Partner of the Year

Recognized for investing in building a long-term, sustainable offering around Puppet Enterprise through multiple levels of the organization

2015 EMC US Partner of the Year

Recognized for exceeding growth expectations and demonstrating a commitment to excellence through innovation and thought leadership to support joint business goals.

2015 EMC Americas Converged Infrastructure Partner of the Year

Recognized for providing customers with the most modernized and comprehensive data center management solutions, comprised of blocks, racks, appliances, and solutions.

2015 VMware Americas Solution Provider Partner of the Year

Awarded for delivering innovative Virtualization and Cloud technologies.

2015 Cisco Architectural Excellence – Data Center Partner of the Year

Recognized for innovation in creating and delivering data center solutions.

2015 VCE Global Partner of the Year

Acknowledged for excellence in driving IT transformation with VCE converged infrastructure.

2.7. Our Mission

To Learn, Grow, and Achieve

Most companies write a mission statement to explain their reason for being.

We put a different twist on a mission statement. To us, it's why we love what we do. We love learning together, growing together, and achieving results together. This means professionally and personally, and doing so together with our peers, our partners, and our customers.

We believe in the concept so much that we made it our tagline.

2.8. Our Commitment to Clients

To Be Easy To Do Business With

Our team members are empowered to make decisions, and don't have to navigate layers of red tape in order to help clients succeed. We'll continue to grow, but we won't act like a big company.

To Provide the Top Problem Solvers

Our engineers are experienced practitioners, providing the frameworks and IP that accelerate timelines and help realize successful outcomes. And if we align with a technology provider, we'll be in their top tier of partners.

To Deliver Memorable Experiences

Expertise may set us apart, but passion puts us ahead. We aim to deliver value beyond what's specified in the contract, and to always bring energy and creativity to the table. It never hurts to have fun along the way.

3. Current Environment

The WVDEP has existing production storage and integrated network infrastructure at its Kanawha City Building in Charleston, WV. New storage will be at both Charleston, WV for (production) and Logan, WV for (offsite backup). The Charleston address is 601 57th Street SE Charleston WV 25304. The address of the Logan site is 1101 George Kostas Dr. Logan, WV 25601. The Charleston site has a computer room with several racks of equipment. ***The existing Storage System is an EMC VNX 5300 OEM S/N APM00120601959.***

4. Qualifications

Vendor, or Vendor's staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:

4.1. All professional services must be performed by the employees of the of the awarded vendor or equipment manufacturer.

Response: All professional services will be performed by either AHEAD or Dell EMC Delivery organizations.

4.2. Professional services are to be coordinated via a single point of contact, either a dedicated project manager or lead technical resource is acceptable. Individual to be identified prior to beginning Project.

Response: A lead Project Manager will be assigned and serve as a single point of contact to coordinate all professional services delivered by the AHEAD and Dell EMC Delivery organizations once we have been awarded.

4.3. All professional services personnel must have a minimum of three (3) years' experience with Netapp AFF and Netapp FAS.

Response: AHEAD's Data Center Practice has extensive expertise including:

- 1000+ Successfully completed engagements including both NetApp and our recommended solution from Dell EMC
- 350+ Data Center Certifications
- 40+ Completed Scorecards Annually
- 500+ Customers Served
- 9.2 / 10 CSAT Scores


4.4. Vendor should provide with their bid response or prior to award any certifications and resume for the project staff who will be assigned to the project.

Response: Below are a few examples of the certifications AHEAD members hold:

- Cisco Gold Certified Partner
 - Specializations: Advanced Data Center, Advanced Enterprise Networks, Advanced Security Architectures, and Advanced Collaboration Architecture
 - 250+ Cisco certifications with 14 CCIE certifications
- Dell Technologies Titanium Black Partner
 - 350+ certifications and 1000+ successful implementations

- VMware Principal Solution Provider
 - Hold all 6 Master Services Competencies
 - 750+ successful VMware solution implementations with 500+ certifications, 11 vExperts, and 5 VCDX's

Prior to beginning the project, AHEAD will provide technical profiles for the project team.



AHEAD PROFILE

SCOTT REDER

CHIEF STORAGE ARCHITECT

<https://www.linkedin.com/in/scottreder/>

Content Developed

- [The Evolving NAS Market](#)
- [Simple Data Visualization in Excel](#)

Areas of Expertise

Storage, Databases, Enterprise Architecture, IT Strategy and Management

About Scott Reder

At AHEAD, Scott works as the Chief Storage Architect, with a focus on the data and storage market for AHEAD. Scott joined AHEAD in June 2008 as a Senior Technical Architect for strategic customers. Scott took on the expanded role of Chief Storage Architect in August of 2011 to provide the highest level of guidance to all AHEAD customers on storage technology, leveraging large enterprise experience, knowledge of industry trends, relationships and a proven approach for strategic planning. Scott took on a temporarily expanded role at AHEAD in January 2017 as a Solutions Principal, covering existing areas of storage and data platforms, and adding accountability for AHEAD's Executive Briefing Center as an executive technology resource.


Scott's 30-year career includes leadership roles in Fortune 100 information technology and with both established and early-stage technology companies. His prior roles in the technology sector include serving as a consultant for large technology companies, including EMC and NCR/Teradata, and two California-based start-ups, Maranti (acquired by EMC) and DATAlegro (acquired by Microsoft).


Questions Scott Helps Clients Address

1. What business requirements are driving the majority of your storage growth?
2. What is your current cloud strategy and is data an inhibitor to meeting your goals?
3. How are you handling storage software licensing and maintenance expense today?
4. What is your current on-premises data center strategy?
5. What is your current technology lifecycle strategy for storage?

Interesting Client Work

- Helped lead a product comparison and proof of concept for hyperconverged infrastructure (HCI), on-premises object storage, and cloud gateways for the North America branch of an automotive company. Also developed scorecards and test plans for these three product areas that mapped to the client's specific use cases.
- Performed two strategic storage engagements for a major insurance company. The first engagement was a comprehensive performance analysis and assessment of their storage infrastructure and the second was a strategy and roadmap for their NetApp NAS environment.


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Dell EMC Profile

Julian Cheek

Storage Architect

Certifications

- VMware Certified Professional on vSphere 6.0
- DELLEMCDSD – Dell EMC Certified Data Science Associate
- DELLEMCIEX – Dell EMC XtremIO Solutions Specialist
- DELLEMCIER – Dell EMC RecoverPoint Specialist
- DELLEMPE – Dell EMC Platform Engineer Symmetrix Solutions
- DELLEMIE – Dell EMC Isilon Solutions Specialist
- DELLEMESA – Dell EMC Storage Administrator Symmetrix/VNX Solutions
- DELLEMCTA – Dell EMC Technology Architect VNX Solutions
- CCNA – Cisco Certified Networking Associate

Areas of Expertise

- Block and File Data Center Array Migrations
- New Infrastructure Design and Deployment
- VMware Deployment and DR Configuration
- Configuring and/or Upgrading Disaster Recovery Solutions
- Documentation of Architectural Standards and Knowledge Transfer

Technical Skills Summary

HARDWARE	VMware, VMAX/DMX, VNX, VG Series, XtremIO, Isilon, Data Domain, IBM XIV, IBM SVC, IBM V7000, Cisco/Brocade SAN switches
TECHNOLOGY TOOLS	SRDF/A/Star, Open Replicator, PPME, VMware Site Recovery Manager, Power Path, Unisphere for VMAX/VNX, Recovery Point replication for VMAX and VNX, VNX Mirror View, ProSphere, EMC SRM, VPLEX
LANGUAGES & DEVELOPMENT TOOLS	Basic Perl scripting
OPERATING SYSTEMS, UTILITIES & VIRTUALIZATION TOOLS	Windows 2008/2012 Server, Linux, Sun Solaris, VMware 5.x,6.x
COMMERCIAL SOFTWARE	Microsoft Word/Excel/PowerPoint 2010, MS Visio

Experience

- Completed over a dozen storage residencies (3 month min to multi year each) for a variety of clients in utilities, banking, financial services, defense, insurance, and healthcare.
- Configuration of new storage arrays, set up replication, and perform data migration
- Configure automated DR tools
- Implement multi-site storage virtualization solutions
- Design and configure VDI solutions leveraging HCI technology
- Integrate hypervisor solution with software defined networking
- Automate log management for HCI
- Upgrade existing storage systems
- Perform knowledge transfer and provide detailed documentation for DR testing and failover
- Managed robust SAN environments
- Project managed data migration and encryption initiatives
- Served as SME for various storage projects
- Designed monitoring and reporting solution for enterprise storage environment

4.5. The awarded vendor must be able to aid in cases where there may be a language barrier.

Response: AHEAD agrees to aid in cases if there is a language barrier

- 4.6. Compliance will be determined prior to contract award by the State through documentation provided by the Vendor with its bid or upon request, Vendor must provide any documentation requested by the State to assist in confirmation of compliance**

Response: AHEAD agrees to provide any documentation requested by the State to assist in confirmation of compliance

5. Mandatory Requirements

- 5.1. Mandatory Contract Services Requirements and Deliverables:** Contract Services must meet or exceed the mandatory requirements listed below

5.1.1. Professional Services

- 5.1.1.1. All professional services related to this solicitation (hardware installation, configuration and updating, software installation, software licensing, migration services

and any additional equipment needed to complete this solicitation) must be bid as a lump sum price.

Response: AHEAD will include all required professional services related to this solicitation in our response as a lump sum price.

5.1.1.2. Project planning meetings may be held via conference call, in person or web conference sessions. A minimum of three (3) meetings prior to commencement of installation.

Response: This project will include multiple meetings prior to commencement of installation. These meetings will server to:

- Conduct a pre-implementation review meeting.
 - Make team introductions
 - Validate that the equipment is on site at the appropriate location with power and cable requirements met.
 - Plan and estimate a schedule for the installation and / or configuration tasks for the Services
- Conduct a requirements gathering meeting.
 - Gather Customer environment information to complete the Configuration Worksheet with details required for planning Dell EMC Unity system installation.
 - Obtain and review Customer's requirements and plans implementation of Dell EMC Unity.
- Conduct meeting to review implementation plan and validate that site and equipment are ready for installation.
 - Performs planning and design for Dell EMC Unity installation and implementation.
 - Documents the proposed architecture in the Configuration Guide.
 - Obtains Dell EMC Unity Installation Worksheet and Dell EMC Unity Configuration Report from Dell EMC personnel or the Customer and reviews it for accuracy.
 - Identifies additional requirements like licenses and beneficial updates like software upgrades and communicates them to the customer.

5.1.1.3. Any required / included project management functions can be performed offsite / remotely.

Response: These services are delivered using onsite (for hardware install) and remote (configuration) resources.

5.1.1.4. The professional services price must be all inclusive; no separate fees will be allowed.

Response: The professional services price submitted as part of our response will be all inclusive. No separate fees will be included.

5.1.1.5. Implementation / Migration Services Phase: This section outlines the minimum tasks that the successful vendor will be required to perform as part of the Implementation / Migration Phase of the project at both the Charleston and Logan WV sites.

5.1.1.5.1. Assist the WVDEP in connecting and configuring the network switching hardware to the existing WVDEP core router(s) at both data centers

Response: AHEAD will be leveraging Dell EMC Networking services to deliver the installation and configuration of the new networking switching hardware into the existing WVDEP environment. These deployments are delivered using on-site, within region, local resources. These services include meeting with the Customer to gather requirements, completing the survey process to document the networking requirements, performing switch hardware rack and stack into a Customer-provided rack, planning and connectivity for multi-vendor integration, switch replacement or both, performing a firmware upgrade of the switch (if needed), configuring the necessary networking parameters, setting any Dell EMC switch requirements for supported storage, validating the newly deployed switch using the appropriate Network Validation Tool (NVT), if applicable, and verifying the deployment by performing the applicable tests documented in the *Test Plan*.

5.1.1.5.2. Work with the WVDEP to configure the storage array at both Charleston and Logan locations to meet the needs of the WVDEP. This configuration will closely mirror the configuration of the existing storage arrays and should consist of the following:

- The vendor must perform the set-up of a single storage pool on the production array providing the total usable capacity of the hard disk drives in the storage

array at the production data center including performance acceleration provided by the flash drives included in the production array.

Response: AHEAD will leverage Dell EMC services to configure pools, file systems, NAS servers, shares or exports, users, quotas, and alerts.

- The vendor must perform the set-up of a primary storage pool on the Logan site backup array providing the same usable capacity as the storage pool configured on the production array.

Response: AHEAD will leverage Dell EMC services to configure pools, file systems, NAS servers, shares or exports, users, quotas, and alerts.

- The vendor must perform the set-up of a secondary storage pool on the Logan site backup array providing the remaining usable capacity of the drives in the offsite backup array for use as backup storage.

Response: AHEAD will leverage Dell EMC services to configure pools, file systems, NAS servers, shares or exports, users, quotas, and alerts.

- The vendor must perform configuration of asynchronous replication between the existing production array and the new production array for NAS (File) storage to prepare for cutover of file share access to the new production array.

Response: The Dell EMC VNX series provides effective block, file, and Unified storage for the midrange market and has been a cornerstone of the Dell EMC portfolio for a number of years. With the introduction of Dell EMC Unity many customers seek a migration path from VNX1/VNX2, and as a result there are a large number of solutions available for both block and file migrations.

For the migration of file resources from the current Dell EMC VNX 5300 platform, AHEAD will use Dell EMC professional services and recommends leveraging Dell EMC Unity Native File Import.

The Dell EMC Unity Native File Import feature (available for both NFS and CIFS) provides a native option for file migration to Dell EMC Unity from a VNX1 or VNX2 system. Leveraging a new Inband Migration Tool (IMT) software, this feature allows for VNX migration to a Dell EMC Unity NAS Server. The Inband Migration Tool was developed to handle the communication and data transfer between VNX and Dell EMC Unity. This migration is either transparent or minimally disruptive to the host IO for NFS or CIFS respectively and allows for a full rollback to the VNX at any time before the migration is committed.

- The vendor must perform configuration of replication of one SAN (Block) storage volume from the existing production array to the new production array.

Response: The Dell EMC VNX series provides effective block, file, and Unified storage for the midrange market and has been a cornerstone of the Dell EMC portfolio for a number of years. With the introduction of Dell EMC Unity many

customers seek a migration path from VNX1/VNX2, and as a result there are a large number of solutions available for both block and file migrations.

For block migration from the current Dell EMC VNX 5300 platform, AHEAD will leverage Dell EMC professional services and recommends leveraging Dell EMC Unity Native Block Import (Block LUNs / CGs).

With the Dell EMC Unity Native Block Import feature, Dell EMC Unity provides native support for the migration of block resources from Dell EMC VNX Systems. This feature allows you to import Block LUNs and Consistency Groups through the Unisphere GUI, or through the IEMCLE or the REST API. Native Block Import leverages a SAN Copy Incremental Push operation on the source VNX system, which is a mature program with run time and documentation associated with it. This feature integrates the configuration and execution aspects of the SAN Copy operations into the Dell EMC Unity migration workflow for increased ease-of-use and simplicity. Only one remote system connection is required to import block resources.

- The vendor must perform configuration of replication between the new production array and new Logan site backup array for NAS (File) storage.

Response: AHEAD will leverage Dell EMC services to provide design and implementation of replication software to operate in a Dell EMC Unity environment. The deployment includes configuring up to twenty replication sessions (local and remote), that includes LUNS and File Systems. A basic Knowledge Transfer of Dell EMC Unity Replication is performed within the customer's environment with a discussion of capabilities and functions.

- The vendor must perform configuration of the storage arrays and the switching hardware to allow new compute resources (servers) at both locations to access the storage arrays at the same location.

Response: AHEAD will leverage Dell EMC services to perform configuration of the storage arrays and the switching hardware to allow new compute resources at both locations to access the storage arrays at the same location.

- 5.1.1.6.** Assist the WVDEP with the migration of the NAS (File) storage and file share access, approximately sixty (60) terabytes, from the old production array to the new production array. This process should be as seamless to the end user as possible and done with no (or very minimal) downtime.

Downtime restricted to the hours of 6:00pm ET to 7:00am ET, Monday through Friday and any time on the weekend.

Response: AHEAD will leverage Dell EMC services to provide a migration design and implement a file (CIFS/SMB or NFS) data migration for approximately sixty (60) terabytes of data size, using appropriate software, in a consistent and predictable manner, based on

the standard data migration methodologies to a Dell EMC Unity storage system. This service is delivered using a blend of onsite and remote resources.

5.1.1.7. Assist the WVDEP with the installation of the hypervisor software (Red Hat Virtualization Hypervisors and Xen Hypervisors and management systems) on the server hardware at each location. Configuration must include clustering, configuration or converged networking, attaching and configuring LUNs/volumes from the storage array to the servers and the installation and configuration of management tools (Red Hat Virtualization Hypervisors and Xen Hypervisors and management systems). The clusters will be configured as follows:

5.1.1.7.1. One (1) 3-node cluster at the production site to run production workloads.

Response: AHEAD will leverage AHEAD services to install the hypervisor software on the server hardware at each location including installation and configuration of the server management tools. AHEAD will leverage Dell EMC services to attach and configure LUNs/volumes from the storage array to the servers.

5.1.1.7.2. One (1) 2-node cluster at the production site to run development/test workloads.

Response: AHEAD will leverage AHEAD services to install the hypervisor software on the server hardware at each location including installation and configuration of the server management tools. AHEAD will leverage Dell EMC services to attach and configure LUNs/volumes from the storage array to the servers.

5.1.1.7.3. One (1) 3-node cluster at the Logan site to run production workloads that reside at the Logan backup site and serve as the replication target for the production cluster.

Response: AHEAD will leverage AHEAD services to install the hypervisor software on the server hardware at each location including installation and configuration of the server management tools. AHEAD will leverage Dell EMC services to attach and configure LUNs/volumes from the storage array to the servers.

5.1.1.8. The hardware installation and the commencement of the data migration must be completed within sixty (60) days after the solicitation is awarded.

Response: Prior to an order being placed, AHEAD works with our OEM partners to understand their availability. Once the solution is ordered, AHEAD will place an order with our OEM partner and work with them to provide tracking information to our customers. After tracking is sent, we are in constant contact with the customer until delivery is made. Then we will establish a Project Kick-Off call for implementation. Projects like this that include custom configuration of storage arrays and data migrations take between 6 to 8 weeks on average to operationalize the systems to commence the data migration. Implementation and configuration will be completed within 60 days at which time the commencement of data migration can occur.

5.1.2. Storage Array Solution for both, Charleston and Logan WV sites: Prior to award, vendors that are providing “or equal” equipment must provide a listing of all

equipment proposed to complete this solicitation for evaluation to determine if the bid meets specifications.

Response: Detailed list included with submission in separate document. High level overview below:

- Charleston, WV Production Site
 - 2x Dell EMC PowerSwitch S4128 Switches
 - (28) ports each, (48 ports total)
 - 16x Broadcom 57412 Dual Port 10Gb SFP+ PCIe Adapters
 - 1x Dell EMC Unity XT 380F Storage Array w/ ~114.78TB Usable Capacity
- Logan, WV Backup Site
 - 1x Dell EMC Unity XT 380F Storage Array w/ ~114.78TB Usable Capacity

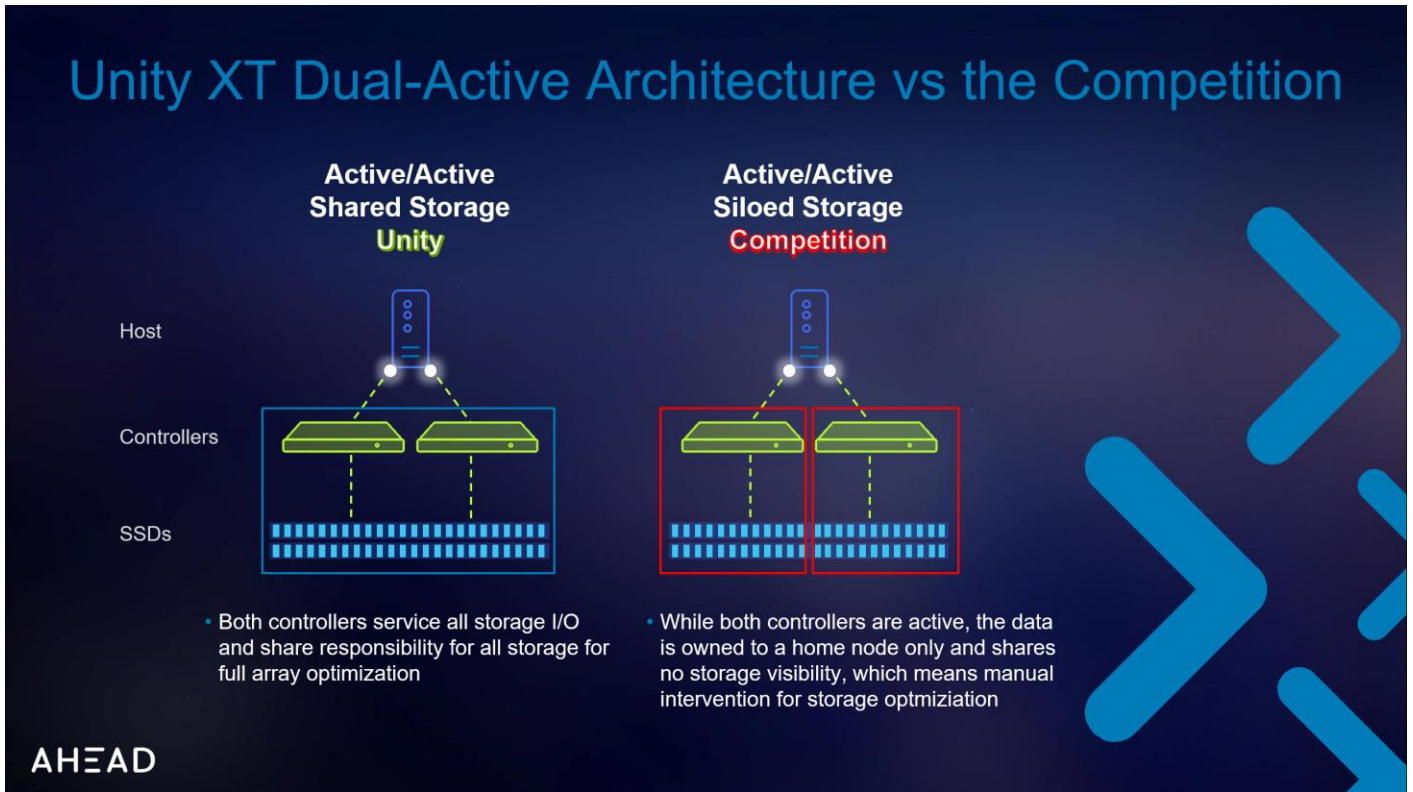
5.1.2.1. The following minimum requirements are based on a NetApp storage array or equal. The technical aspects listed below are required to fulfill the current needs of the WVDEP.

5.1.2.1.1. Must provide dual storage controllers that function as a highly available clustered pair and they must have the following minimum specifications.

- 64 GB of RAM
- 8GB of NVRAM
- 1x RJ45 10gb Ethernet port
- 2x SFP+ 10gb Ethernet ports
- 2x 12gb SAS ports
- 2x 64-bit 12 core intel 1.70GHz CPU

Response: Dell EMC Unity XT leverages a Dual-active architecture. Unity XT storage uses both storage processors (SPs) to serve host I/O and run data operations in an active/active manner, thereby efficiently making use of all available

hardware resources and optimizing performance, cost, and density in customer data centers.



The disk processor enclosure (DPE) for the Dell EMC XT 380F model utilizes a 25-drive 2U DPE using 2.5-inch drives. For the 380F system, the front of the DPEs have LEDs for both the enclosure and drives to indicate status and faults.



Figure 1 25-drive 2U DPE (380/F)

The back of the DPE reveals the SPs and their on-board connectivity. Each SP has 2x 12Gb SAS ports used for connecting additional storage and each SAS port has a 4-lane configuration. For front-end connectivity, the SPs have 2x 10GbE BaseT ports which can auto-negotiate between 10 Gb/1 Gb/100 Mb, as well as 2 x converged network adapter (CNA) ports. These CNA ports can be configured to server 16 Gb/8 Gb/4 Gb Fibre Channel using either multi-mode or single-mode FC SFPs, 10 GbE Optical using SFP+ connectors or TwinAx cables in active or passive mode, or 1 GbE BaseT using RJ45 SFPs. For optical connections, the CNAs feature full iSCSI offload which relieves the SP from handling TCP/IP network stack operations. For management and servicing, each SP has a dedicated 1 GbE BaseT management port and a dedicated 1 GbE BaseT service port; both ports operate at 1 Gb/100Mb/10 Mb speeds.



Figure 2 Back view of DPE (380/F)

5.1.2.2. The storage must have the following minimum storage capacity:

5.1.2.2.1. 100 TiB (Tebibytes/Binary Terabytes) of usable formatted flash storage using SSDs. Useable capacity does include dedupe, compression, or other efficiency technologies as guaranteed by vendor or manufacturer.

Response: Our configuration includes 114.78 TiB of usable formatted flash storage using SSDs. And is covered under the Dell EMC FutureProof guarantee.

5.1.2.2.2. Must support clustering with additional controllers with a minimum cluster size of eight (8) or more controllers providing live mobility of storage volumes between controllers with zero downtime.

Response: Dell EMC Unisphere Central allows you to cluster together up to 1000 Dell EMC systems for basic administration. Additionally, the Dell EMC Unity series allows for the relocation of storage resources on the system through the Local LUN Move feature. This feature is available for VMFS Datastores and Block LUNs, including LUNs within a Consistency Group. The ability to relocate data between

pools or within the same pool at the LUN level allows for manual control over data distribution and load balancing.

5.1.2.3. The storage array must provide the following functionality:

5.1.2.3.1. Must provide a single management interface for both block and file storage functionality.

Response: Dell EMC Unisphere is a graphical user interface that enables users to manage their various storage configurations and associated features in an intuitive fashion. Built upon the universally accessible HTML5 architecture, Unisphere ensures a positive product experience by using easy-to-understand language and streamlined workflows. Storage administrators of all technical capabilities can use Unisphere to simplify management of both block and file storage functionality while making data centers more efficient and more productive, as well as improving associated business operations.

5.1.2.3.2. Must support single, double and triple parity RAID.

Response: Storage pools consist of a collection of RAID protected drives. For pools with multiple drive types, each drive type can be configured with its own RAID type and stripe width. As shown in the table below, Dell EMC Unity XT supports various RAID levels, which offer different levels of protection, performance, and cost. This includes advanced dynamic raid capabilities that automatically deliver raid protection, automated distributed sparing, and SSD health management. These dynamic raid capabilities provide the fastest rebuild performance, highest data protection capabilities, simplest management, and allows customers to add a single drive at a time, drastically lowering complexity and cost. Legacy RAID protection schemas found in other solutions require minimum upgrades of 12 or more drives for even a minor capacity upgrade.

Choose the appropriate RAID level depending on the requirements.

RAID Level	Description	Protects Against	Pros	Cons	Configurations
RAID 1/0	Mirrored and striped	Multiple drive failures, if they are not on the same mirrored pair	Highest performance	Only 50% of the drive capacity is usable	1+1 2+2 3+3 4+4
RAID 5	Striped with distributed parity	Single drive failure	Best usable capacity	Lower performance and availability than RAID 1/0	4+1 8+1 12+1
RAID 6	Striped with dual distributed parity	Double drive failure	Better availability than RAID 5 and better usable capacity than RAID 1/0	Lowest performance	4+2 6+2 8+2 10+2 12+2 14+2

5.1.2.3.3. Must support Volume Encryption.

Response: Dell EMC Unity XT includes a Data at Rest Encryption feature, which provides controller-based encryption of data stored on Dell EMC Unity storage systems as it is written to disk. Whether drives are lost, stolen, or failed, unauthorized access is prevented by rendering the drive unreadable without the encryption key within the storage system. In addition to peace of mind, D@RE offers additional benefits including regulatory compliance, secure decommissioning, and the possibility to eliminate the need for physical drive shredding.

5.1.2.3.4. Must support per volume deduplication that can be enabled or disabled, during and after volume creation.

Response: The Dell EMC Unity family of storage systems are feature-rich, easy-to-use, and deliver full Block and File unified environments starting in a single 2U enclosure. To help reduce the Total Cost of Ownership and increase the efficiency of a Dell EMC Unity storage system, the Dell EMC Unity Data Reduction feature provides space savings logic to the system with zero block detection and deduplication along with an optional feature called Advanced Deduplication, which expands the deduplication capabilities of the Data Reduction algorithm. With data reduction, the amount of space required to store a dataset for data reduction enabled storage resources is reduced when savings are achieved. This space savings reduces the amount of physical storage required to store a dataset for data reduction enabled storage resources is reduced when savings are achieved. This space savings reduces the amount of physical storage required to store a dataset, which can lead to cost savings. Data reduction savings are not only achieved on the storage resource it is enabled on, but space savings are also realized on Snapshots and Thin Clones of those resources as well. Snapshots and Thin Clones inherit the data reduction setting of the source storage resource, which helps to increase the space savings that they can provide.

Dell EMC Unity Data Reduction can be enabled and disabled at any point in time, during and after volume creation.

5.1.2.3.5. Must support per volume compression that can be enabled or disabled, during and after volume creation.

Response: The Dell EMC Unity Data Reduction feature also includes compression for both block and file resources.

Dell EMC Unity Data Reduction can be enabled and disabled at any point in time, during and after volume creation.

5.1.2.3.6. Must support the ability to natively offload/de-stage cold data to the on and/or off premise private or commercial cloud (S3)

Response: Dell EMC Unity leverages the Fully Automated Storage Tiering for Virtual Pools (FAST VP) feature to relocate data to the most appropriate disk type

depending on activity level to improve performance while reducing cost within the storage array.

Dell EMC Unity Cloud Edition is a virtualized storage appliance that has a rich feature set, comparable to the rest of the Dell EMC Unity family. Because of its ease of use and quick deployment time, this makes Dell EMC Unity Cloud Edition the ideal candidate for test/development environments or production deployments into VMC on AWS, enabling disaster recovery between on-premises-deployed Dell EMC Unity systems and VMware Cloud-based appliances, and addresses enterprise capabilities such as tiering, quotas, file synchronization and DR in the cloud with support for VMware Cloud on AWS.

Lastly, the Dell EMC Cloud Tiering Appliance enables administrators to automatically move data from Dell EMC Unity to and from the cloud based on user-configured policies. This ability optimizes primary storage usage, dramatically improves storage efficiency, shortens the time required to back up data, and reduces overall Total Cost of Ownership (TCO) for primary storage.

The supported target cloud repositories are Dell EMC Elastic Cloud Storage (ECS), Microsoft Azure, Amazon S3, and IBM Cloud Object Storage (COS).

5.1.2.3.7. Must be able to create redirect on write snapshots within the storage array.

Response: The technology used for snapshots of both block and file resources in Dell EMC Unity is called redirect on write (ROW). With redirect on write, new writes to snapped storage resources or their snapshots are redirected to a new location in the same pool, and pointers are updated to point to the new location. This method contrasts to copy-on-write snapshots that, in order to preserve the snapped data, copy blocks to a designated protection space prior to being overwritten. With redirect on write, there is no need to define separate protection space or to copy data to a separate location before writing to snapped blocks because new data is simply written to a new location in the same pool.

5.1.2.3.8. Must support zero downtime firmware and OS upgrades to the storage controllers.

Response: The Dell EMC Unity Operating Environment (OE) refers to the software running on the Dell EMC Unity storage system. Non-disruptive upgrades to a new version of the Dell EMC Unity OE are supported on all physical Dell EMC Unity systems. This is accomplished by upgrading one SP at a time and ensuring all resources are running on the SP no undergoing the upgrade. Upgrading to a new version of Dell EMC Unity OE provides access to all new functionality that is supported on that system, and is easily initiated and monitored through Unisphere, UEMCLI, or REST API.

The drive firmware bundle is included in the OE upgrade package downloaded from Dell EMC Support. The drive firmware package is staged within the system as part of the upgrade process. The drive firmware bundle is also available as a separate download. The software OE and drive firmware upgrade operations through Unisphere and Unisphere CLI remain the same. If the system is upgraded using an

OE upgrade package that includes a drive firmware bundle, the user is prompted to upgrade any drives which are not running the latest firmware. In this case, the user can opt-out and skip the drive firmware upgrade operation or proceed with the Upgrade Drive Firmware wizard that is automatically opened.

5.1.2.3.9. The storage array must support the following protocols:

- iSCSI (internet small computer systems interface)
- NFS (network file system)
- pNFS (parallel network file system)
- Must support VAAI extensions when utilized with VMware vSphere virtualization platform.
- Must support ODX extension when utilized with Microsoft Hyper-V virtualization platform.

Response: Dell EMC Unity supports the following protocols: **NFSv3**, **NFSv4**, **NFSv4.1** (**pNFS** is part of 4.1); CIFS (SMB 1), SMB 2, SMB 3.0, SMB 3.2, SMB 3.1.1; FTP and SFTP; FC, **iSCSI**, and VVols 2.0.

vStorage API for Array Integration (VAAI) improves ESXi host utilization by offloading storage-related tasks to the Dell EMC Unity system. Since these tasks are processed by the array, the ESXi host's CPU, memory, and network utilization is reduced. For example, an operation such as provisioning full clones from a template VM can be offloaded to Dell EMC Unity storage. The Dell EMC Unity system processes these requests internally, performs the write operations, and returns an

update to the ESXi host once the requests are complete. The following primitives are supported with Dell EMC Unity storage:

Block:

- Atomic Test and Set (ATS): This enables arrays to perform locking at a block level of a LUN, instead of the whole LUN. This is also known as Hardware-Assisted Locking.
- Block Zero: This enables arrays to zero out a large number of blocks to speed up virtual machine provisioning. This is also known as Hardware-Assisted Zeroing.
- Full Copy: This enables arrays to make full copies of data within the array without the need for the ESXi host to read and write the data. This is also known as Hardware-Assisted Move.
- Thin Provisioning: This enables arrays to reclaim unused blocks on a thin LUN. This is also known as Dead Space Reclamation.

File:

- Fast File Clone: This enables the creation of virtual machine snapshots to be offloaded to the array.
- Full File Clone: This enables the offloading of virtual-disk cloning to the array.
- Reserve Space: This enables provisioning virtual disks using the Thick Lazy and Eager Zeroed options over NFS.

Offloaded Data Transfer (ODX), introduced in Microsoft Windows Server® 2012, is designed to offload operations from the Hyper-V host to the Dell EMC Unity storage system. Moving data using traditional methods for tasks such as migrating virtual machines, backing up data, or copying large data files can be a time-consuming and resource-intensive process. By offloading these functions, ODX lowers the Hyper-V server's CPU and network utilization to nearly zero during copy or move operations.

ODX accelerates copy operations using a token-based mechanism for reading and writing data within the Dell EMC Unity system. Since only the small token is transferred between the hosts, all of the actual data movement is accomplished by the Dell EMC Unity system. Once the data movement is complete, the Dell EMC

Unity system sends the acknowledgement to the host to confirm the operation is complete. Figure 3 shows how ODX works.

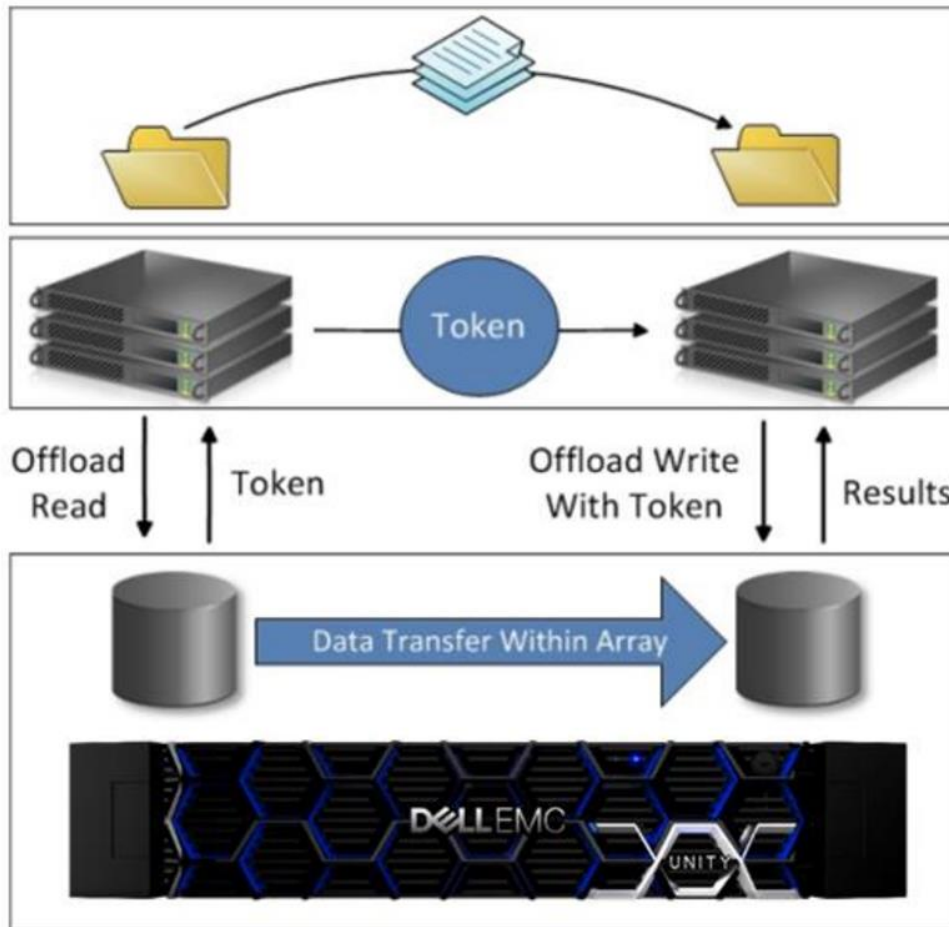


Figure 3 Offloaded data transfer

5.1.2.3.10. The storage array must support at a minimum, the following operating systems: Windows Server 2008, Windows Server 2012, Windows Server 2016, Xen Hypervisor and Red Hat Virtualization Hypervisor.

Response: Dell EMC Unity XT supports the following operating systems: **Citrix XenServer**, HPE HP-UX, HPE Open VMS, IBM AIX, IBM VIOS, **Microsoft Windows Server 2008**, **Microsoft Windows Server 2012**, Microsoft Windows Server 2016, Microsoft Windows Server 2019, Microsoft Windows Storage Server

2012, Oracle Linux OL, Oracle Solaris, Red Hat RHEL, **Red Hat Virtualization**, SUSE SLES, VMS Software VSI OpenVMS, and VMware ESXi.

5.1.2.3.11. The storage array must support asynchronous replication of individual storage volumes with the existing WVDEP storage array.

Note: NetApp storage arrays have native replication support with existing storage array. If bidding an equivalent system from another vendor without native replication support, then the following requirements must also be met:

- If native replication with the existing WVDEP storage array is not supported, licenses for any 3rd party software required to replicate individual volumes should be included in the bid response.
- If 3rd party software is necessary and required to be run on a server, the bid response must include an appropriately sized server to run the software with at least 2 years of hardware warranty / support for the proposed server.
- The NetApp storage arrays on which the storage requirements were based provide native replication tools for this functionality. Vendor should provide any Software Terms and Conditions that the State or the Agency will be

required to review and / or accept as a part of this solicitation with their submitted bid response or prior to award.

Response: The Dell EMC Unity storage system provides native replication tools for this functionality.

5.1.3. Storage Array at the Production Site of Charleston, WV. The following minimum requirements are based on a NetApp AFF (All Flash FAS) A220, or Equal, Storage Array.

5.1.3.1. Must support synchronous replication of individual storage volumes with the, offsite backup array included as part of this solicitation.

Response: Dell EMC Unity XT fully supports synchronous and asynchronous replication for both block and file.

5.1.3.2. Vendor must include 2 x 64-bit 12-core Intel 1.70 GHz CPU.

Response: The Dell EMC Unity XT 380F model includes 2 x Intel Broadwell 1.7GHz CPU with 12 cores

5.1.3.3. Vendor must include 4 x SFP+ 10gb Ethernet / 16gb FC ports.

Response: Dell EMC Unity XT 380F is configured with 8x SFP+ 10Gb Ethernet and 4x 16Gb FC ports

5.1.3.4. Must be able to replicate snapshot copies of individual volumes with the Logan site backup array included as part of this solicitation.

Response: Asynchronous and Synchronous Replication supports the replication of read-only file and block snapshots to either a local or a remote site along with the source storage resource's data. Both scheduled snapshots and user created snapshots can be replicated. Snapshot Replication can be enabled on all resources that support Asynchronous Replication, including: LUNs, Thin clones, Consistency Groups, File Systems, and VMware NFS and VMFS Datastores. Snapshot Replication for scheduled snapshots can be enabled or disabled at any time in the lifetime of the replication session. The schedule and user snapshots can be replicated with a remote retention policy that is longer than that of the source resource. For example, the retention policy for the source

snapshots might be set for 2 hours while the retention policy for the replicated snapshot might be set for 1 week.

- 5.1.4.** The following Network equipment must be included for connectivity from the storage device. All equipment in this solicitation should work together at full performance and with redundancy.

Response: We are responding with an “Or Equal” solution from Dell EMC for network equipment. See below.

- 5.1.4.1.** Dual Nexus 3524-XL switches which will provide 24 ports 10Gb SFP+ connectivity.

Response: Ahead is responding with Dual Dell EMC PowerSwitch S4128F-ON switches which will provide 28 ports 10Gb SFP+ connectivity.

The Dell EMC PowerSwitch S4128F-ON is a high-performance open networking top-of-rack switch with multirate Gigabit Ethernet and unified ports. You will achieve performance, flexibility, and cost-effectiveness with this ToR switch that features 28x 10Gb SFP+ ports, 2x 40Gb QSFP+ ports, and 4x 100GbE QSFP28 ports, and zero-touch installation of alternate network operating systems.

The S4128F-ON 10GbE switches comprise Dell EMC’s latest disaggregated hardware and software data center networking solutions, providing state-of-the-art 100GbE uplinks, fibre channel connectivity and a broad range of functionality to meet the growing demands of today’s data center environment. These innovative, next-generation top-of-rack open networking switches offer optimum flexibility and cost-effectiveness for the enterprise, midmarket, and Tier2 cloud service provider with demanding compute and storage traffic environments.

The compact S4128F-ON model provide industry-leading density with 28 ports of 10GbE, 2 ports of 40GbE, and 4 ports of 100GbE in a 1RU form factor.

Using industry-leading hardware and a choice of Dell EMC’s OS10 or select 3rd party network operating systems and tools, the S4128F-ON offers flexibility by provision of configuration profiles and delivers non-blocking performance for workloads sensitive to packet loss. The compact S4128F-ON model provide multirate speed, enabling denser footprints and simplifying migration to 100Gbps.

Also unique to the S4100-ON series is the ability to meet the demands of converged and virtualized data centers by offering unified ports and hardware support for L2 and L3 VXLAN Gateway. Priority-based flow control (PFC), data center bridge exchange (DCBX)

and enhanced transmission selection (ETS) make the S4100-ON ideally suited for DCB environments.

Dell EMC PowerSwitch S4100-ON switches support the open source Open Network Install Environment (ONIE) for zero touch installation of Dell EMC's OS10 networking operating system, as well as of alternative network operating systems.

5.1.4.2. Multimode Fiber which will be used to uplink the switches to the existing network.

Response: This is included in our response.

5.1.4.3. Vendor must provide PCI-Express card to connect servers to storage network as described below:

5.1.4.3.1. Sixteen Adaptor cards (16) QLogic 57810 Dual Port 10Gb Direct Attach/SFP+ Gigabit PCI-Express, Low Profile Network Adapter cards or equal.

Response: AHEAD is responding with an "Or Equal" solution. We are including sixteen adaptor cards (16) Broadcom 57412 Dual Port 10Gb Direct Attach/SFP+ Gigabit PCI-Express, Low Profile Network Adapter cards.

The Broadcom 57412 10Gb Network Interface Card from Dell is ideal for connecting your server to your network. The Dual Port PCIe Adapter proven to be a reliable and standards-based solution. This product has been tested and validated on Dell systems. It is supported by Dell Technical Support when used with a Dell system and features a compact, space-saving design that is ideal for high-performance network applications.

- Adaptor cards must all be PCI-Express and Low-Profile Network Adaptors.

Response: The Broadcom 57412 card uses PCI-Express and is a Low-Profile Network Adaptor.

- Adaptor cards must be Dual Port Ethernet.

Response: The Broadcom 57412 card is Dual Port Ethernet.

- Adaptor cards must be 10Gb Direct attach/SFP+

Response: The Broadcom 57412 card is 10Gb Direct attach/SFP+.

5.1.4.4. Vendor must provide SFP+ Module as described below:

5.1.4.4.1. Cisco Original 10GBase-SR SFP+ Module, SFP-10G-SR 10 Gig Hot Swappable 10GBase-SR SFP+ modules provide 10Gbps or equal.

Response: Ahead is responding with an "Or Equal" solution from Dell. Our response includes the Dell Networking, Transceiver, SFP+, 10GbE, SR, 850nm Wavelength, 300m Reach. The Dell SFP+ transceiver delivers fiber connectivity to extend the

range of your network. This hot-pluggable transceiver with SFP+ footprint features a Duplex LC connector. The Dell networking 10GBase-SR SFP+ transceiver provides 10GbE connectivity up to 300 m.

Additionally, it provides a unique enhanced digital diagnostic monitoring interface, which allows real-time access to device operating parameters such as transceiver temperature, laser bias current, transmitted optical power, received optical power, and transceiver supply voltage.

- SFP module must be 10GBase-SR or greater SFP+.

Response: The Dell SFP module is a 10GBase-SR SFP+.

- SFP module must be 10Gig or greater Hot Swappable.

Response: The Dell SFP module is 10Gig Hot Swappable.

- SFP must provide 10Gbps or greater.

Response: The Dell SFP module provides 10Gbps data transfer rate.

- 5.1.5. Storage Array Solution for Logan site backup.** The following minimum requirements are based on a NetApp FAS (FlexArray Storage) 8200, or equal,

storage array. The technical aspects listed below are required to fulfill the current needs of the WVDEP:

Response: Ahead is responding with an “Or Equal” solution from Dell EMC. Our response includes the Dell EMC Unity XT 380F Storage array.

5.1.5.1. Vendor must include 8 x Small Form-Factor Pluggable SFP+ 10gb Ethernet / 16gb Fiber Channel FC ports

Response: The Dell EMC Unity XT 380F storage array includes 8 x Small Form-Factor Pluggable SFP+ 10gb Ethernet and 8 x 16gb Fiber Channel FC ports.

5.1.5.2. Storage array must have the following minimum storage capacity:

5.1.5.2.1. 100 TiB (Tebibyte / Binary Terabytes) of usable formatted flash storage using mini SAS hard drives. Usable capacity does include dedupe, compression, or other efficiency technologies as guaranteed by vendor or manufacturer.

Response: The Dell EMC Unity XT 380F storage array is configured with ~114.78TiB of usable formatted flash storage and comes with the Dell EMC FutureProof Storage Guarantee

5.1.6. Support for Storage Arrays at Charleston and Logan, WV sites.

5.1.6.1. Must include 24x7 remote and on-site support for a duration no less than three (3) years from the date of equipment testing and acceptance by the WVDEP.

Response: Our response includes Dell EMC ProSupport Plus Mission Critical 4 Hour OnSite Service for a duration of 36 months (3 years).

5.1.6.2. Must adhere to the following support response times:

5.1.6.2.1. Priority 1: Thirty (30) minutes (storage down and unable to serve data or a state of frequent “panic” or “hang” states, or storage performance is degraded to prevent normal business operations).

Response: Dell EMC considers this a Severity Level 1 and will respond within 30 minutes; on a 24x7 basis.

5.1.6.2.2. Priority 2: Two (2) hours (storage experiencing infrequent, isolated, or intermittent “panic” or “hang” states, or performance is in a degraded state that still allows normal business operations but is inconsistent or less than optimal state).

Response: Dell EMC considers this a Severity Level 2 and will respond within 2 hours; on a 24x7 basis.

5.1.6.2.3. Priority 3: Eight (8) hours (storage experiencing an issue, anomaly, or cosmetic defect that inflicts little or no business impact).

Response: Dell EMC considers this a Severity Level 3 and will respond within 3 local business hours.

5.1.6.2.4. Priority 4: Twenty-four (24) hours (Normal requests for information regarding installation, configuration, use, and maintenance of the storage system).

Response: Dell EMC considers this a Severity Level 4 and will respond within 8 local business hours.

5.1.6.3. Support for configuration of asynchronous replication between the existing production array and the new production array for NAS (File) storage to prepare for cutover of file share access to the new production array.

Note: If any additional software is needed for this process, the vendor must include licenses of that software that will be retained by the WVDEP as part of their bid response for these services. The NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality.

Response: The Dell EMC VNX series provides effective block, file, and Unified storage for the midrange market and has been a cornerstone of the Dell EMC portfolio for a number of years. With the introduction of Dell EMC Unity many customers seek a migration path from VNX1/VNX2, and as a result there are a large number of solutions available for both block and file migrations.

For the migration of file resources from the current Dell EMC VNX 5300 platform, AHEAD will use Dell EMC professional services and recommends leveraging Dell EMC Unity Native File Import.

The Dell EMC Unity Native File Import feature (available for both NFS and CIFS) provides a native option for file migration to Dell EMC Unity from a VNX1 or VNX2 system. Leveraging a new Inband Migration Tool (IMT) software, this feature allows for VNX migration to a Dell EMC Unity NAS Server. The Inband Migration Tool was developed to handle the communication and data transfer between VNX and Dell EMC Unity. This migration is either transparent or minimally disruptive to the host IO for NFS or CIFS respectively and allows for a full rollback to the VNX at any time before the migration is committed.

5.1.6.4. Support for configuration of replication of one SAN (Block) storage volume from the existing production array to the new production array.

Note: If any additional software is needed for this process, the vendor must include licenses for that software, which will be retained by the WVDEP as part of their bid response for these services. The NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality.

Response: The Dell EMC VNX series provides effective block, file, and Unified storage for the midrange market and has been a cornerstone of the Dell EMC portfolio for a number of years. With the introduction of Dell EMC Unity many customers seek a

migration path from VNX1/VNX2, and as a result there are a large number of solutions available for both block and file migrations.

For block migration from the current Dell EMC VNX 5300 platform, AHEAD will leverage Dell EMC professional services and recommends leveraging Dell EMC Unity Native Block Import (Block LUNs / CGs).

With the Dell EMC Unity Native Block Import feature, Dell EMC Unity provides native support for the migration of block resources from Dell EMC VNX Systems. This feature allows you to import Block LUNs and Consistency Groups through the Unisphere GUI, or through the IEMCLE or the REST API. Native Block Import leverages a SAN Copy Incremental Push operation on the source VNX system, which is a mature program with run time and documentation associated with it. This feature integrates the configuration and execution aspects of the SAN Copy operations into the Dell EMC Unity migration workflow for increased ease-of-use and simplicity. Only one remote system connection is required to import block resources.

- 5.1.6.5.** Support for configuration of replication between the new production array and new Logan backup array for NAS (File) storage.

Response: AHEAD will leverage Dell EMC services to provide design and implementation of replication software to operate in a Dell EMC Unity environment. The deployment includes configuring up to twenty replication sessions (local and remote), that includes LUNS and File Systems. A basic Knowledge Transfer of Dell EMC Unity Replication is performed within the customer's environment with a discussion of capabilities and functions.

- 5.1.6.6.** Support for configuration of the storage arrays and the switching hardware to allow new compute resources (blade servers) at both locations to access the storage arrays at the same location.

Response: AHEAD will leverage Dell EMC services to perform configuration of the storage arrays and the switching hardware to allow new compute resources at both locations to access the storage arrays at the same location.

- 5.1.6.7.** Must configure "Call Home" feature, register the solution with vendor support and assist in registration of WVDEP personnel on the support site.

Response: Our response includes Dell EMC Secure Remote Services (formerly ESRS) , a secure, two-way connection between Dell EMC products and Dell EMC Customer Support that helps customers avoid and resolve issues up to 73% faster. It is completely virtual and offers flexibility for enterprise environments of any size.

- 5.1.6.8.** Must include advance hardware replacement. If the original equipment is not returned to the agency, vendor must provide a communication regarding the removed

item which shall include item name, serial number and / or WVDEP property tag (if applicable).

Response: Dell EMC ProSupport Plus includes advanced hardware replacement.

- 5.1.7. Knowledge Transfer and Training:** This section will outline any training or knowledge transfer required as part of this solicitation. Requirements may vary, based on whether NetApp storage arrays or equal are being provided.

Response: A basic Knowledge Transfer will be performed within the customer's environment with a discussion of capabilities and functions.

- 5.1.7.1.** All implementation work being performed will be done alongside WVDEP staff and will provide knowledge transfer on all work being performed, no additional knowledge transfer should be required.

Response: Dell EMC and Ahead resources will work directly with WVDEP staff throughout the implementation.

- 5.1.8. Software license and additional equipment:**

- 5.1.8.1.** Vendor must include any additional software licenses needed for the process in their bid response. The NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality.

Response: respond here

- 5.1.8.2.** All software and software licenses needed for this solicitation must be included with vendors bid. Software licenses will be retained by WVDEP.

Response: Dell EMC UnityXT 380F includes an All-Inclusive Software package that includes native replication tools. The software package is outlined below:

Dell EMC Unity All-Flash All-Inclusive Software	
Management Features	Unisphere/Central, CloudIQ, CTA, Inline Data Reduction, QoS, FLR, Multi-Tenancy, Dynamic Pools, ESA Adapter
Unified Protocols	File, Block, VVOLS
Local Protection	Encryption, Anti-Virus, 2-Way NDPM, AppSync Basic, Snapshots/Thin Clones (iCDM)
Remote Replication	File & Block Sync/Async Replication, Metrosync Manager, Recoverpoint Basic & for VM's
Ecosystem Integration	VMware, Microsoft, OpenStack, REST API

5.1.8.3. All cables and connectors to connect all equipment must work together at full speed and with redundancy. The power cables will need to have a C20 end to fit our existing PDUs.

Response: Our response includes all cables and connectors to connect all equipment that does work together at full speed and with redundancy. The power cables included have a C20 end to fit your existing PDUs.

5.1.9. Acceptance: Acceptance shall be defined as successful demonstration and testing of all system requirements, including training, with the ability for all users to navigate and utilize the system to perform their defined roles. The Agency with the Vendor's acceptance will issue a written letter and Change Order request to WV Purchasing Division as formal acceptance of the system. Upon mutual agreement of acceptance

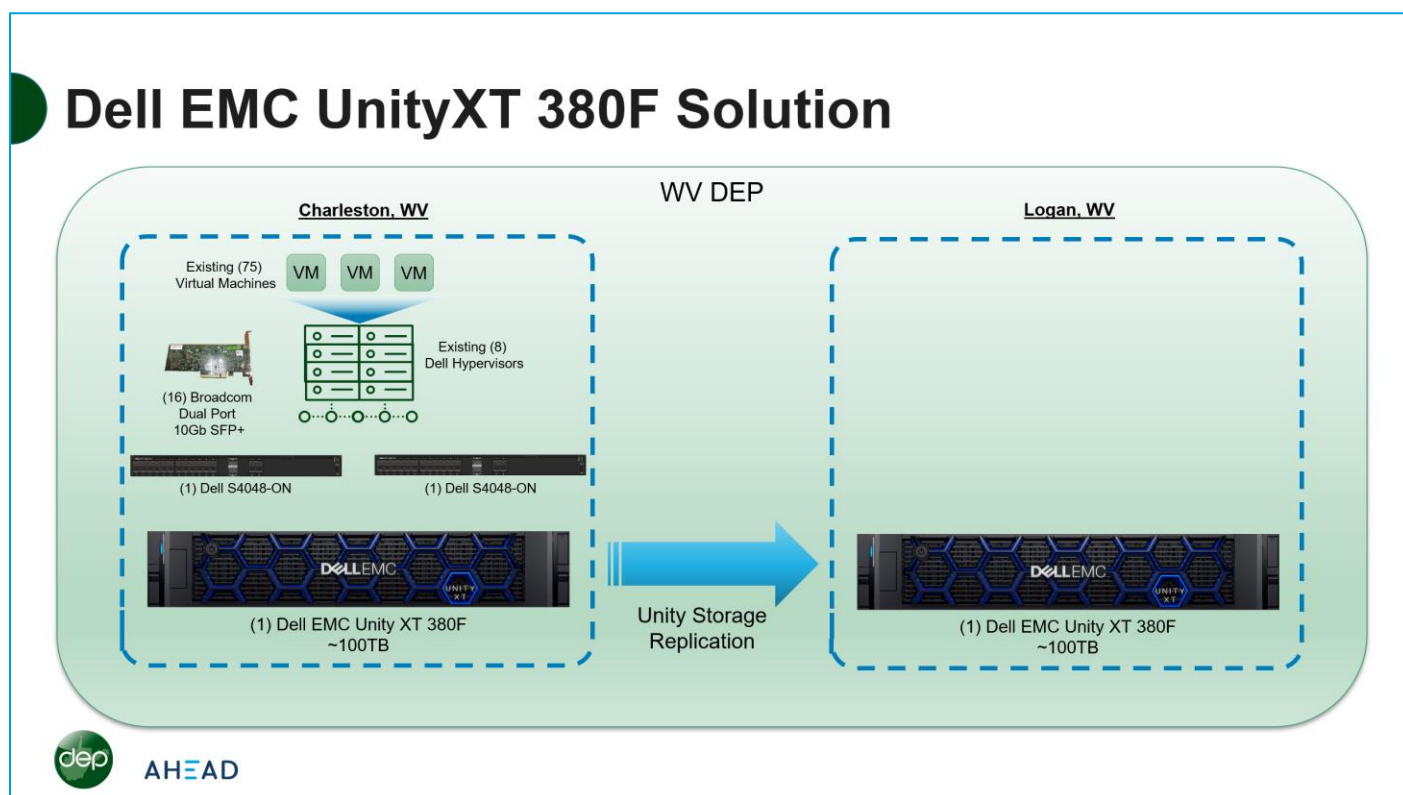
by both the Agency and the Vendor the Change Order issued by WV Purchasing Division will start the first year's maintenance and support.

Response: AHEAD agrees to the statements above.

5.1.10. Maintenance and Support: The second, third, and fourth year's support / maintenance will also be added by subsequent formal change order, upon contract renewal at the end of the prior year's contract period for support / maintenance.

5.1.11. Response: AHEAD agrees to this.

6. Dell EMC UnityXT 380F Design



7. Additional Considerations

Deployment and Management

1. Dell EMC Unity Deploys in 25 minutes. Provisioning 60 LUNs in 3 minutes
2. Other vendors deployment can take hours, requires specific expertise. Management requires more than one UI

Data Reduction

1. Dell EMC Unity provides low impact, always on, inline data reduction that doesn't compromise performance for capacity efficiency
2. Other vendors see upwards of 10% or more performance impact

High Capacity Efficiency

1. Dell EMC Unity provides 85% usable capacity before inline efficiencies
2. Other vendors provide 65% usable capacity before inline efficiencies

Non Disruptive, Fast Upgrades

1. Dell EMC Unity can perform simple data in place controller upgrades
2. Other vendors perform longer, less automated, several conditions required for NDU

Built for Multi-Cloud

1. Dell EMC Unity VSA is available in AWS, cloud tiering to AWS, Azure, IBM, and ECS. Cloud storage services for DRaaS, workload migrations, Cloud IQ Analytics, and VCF validated.
2. Other vendors provide choice of cloud vendor and hypervisor

True Active/Active Controllers

1. With Dell EMC Unity, both controllers contribute performance to a single pool of addressable storage.
2. Other vendors provide "Shared-Nothing Controllers". Meaning there is no single storage pool or shared performance within their HA pairs. Each drive is addressable by only one of the two controllers.

Appendix: Our Top Tier Partners

AWS

- Premiere Consulting Partner
 - Storage Competency
 - DevOps Competency
 - End User Computing
 - Solution Provider
 - Public Sector Partner
- VMware Cloud on AWS Beta/Launch Partner
- Deep migration experience with financial and competitive expertise
- Deep expertise with ServiceNow and VMware Integration
- Focused on Enterprise accounts
- 70+ specialists and 50+ certifications
- Educational Labs focused on:
 - Cloud Formation Overview
 - VPC Network Peering
 - Operations: EC2 Systems Manager
 - Security/Automated Remediation
 - Automation and Cloud Formation Templates
- Deep AWS and DevOps Team with: Chef, HashiCorp, CloudBees, Puppet

Cisco

- Gold Certified Partner
- Over 250 Cisco certifications with 14 CCIE certifications
 - CCIE's - Data Center, Routing and Switching, Service Provider, and Security
- 2019 Cisco Partner of the Year
- 2015 Cisco Architectural Excellence – Data Center Partner of the Year
- Member of Cisco Data Center Technical Advisory Board
- Member of AppDynamics Titan Partner Program
- Gold Partner and focus partner
- Cisco Specializations: Advanced Data Center, Advanced Enterprise Networks, and Advanced Security Architectures
- Specialists in data center architecture (UCS, HX, Nexus and ACI), enterprise networking (DNA), software defined networking (ACI Anywhere, Viptela) and network automation.

Dell Technologies

- Titanium Partner
- 2019 Dell Technologies Global Titanium Partner President's Circle Award
- 2019 Dell Technologies Go Big-Win Big Big partner of the Year (Data Center)
- 2018 Dell EMC Extraordinary Partner of the Year
- Member of EMC Technical Advisory Committee and EMC Sales Advisory Committee
- Certified to implement all DellTechnologies solutions with over 350 certifications and over 1000 successful implementations
- EMC Business Partner Program and Preferred Partner Provider for professional services
- EMC Platinum Partner (1 of only 6 nationally) as a result of our commitment to providing enterprise clients with world-class solutions in hybrid cloud, converged infrastructure, and next-generation storage platforms
- Member of the EMC BRS, RecoverPoint, and Virtualization program

Microsoft

- Gold Partner
 - Application Development, Cloud Platform, Data Analytics, Data Platform, Datacenter
- MCSAs
 - Office 365 and Cloud Platform
- MCSEs
 - Productivity and Cloud Platform and Infrastructure
- Microsoft Certified
 - Azure Administrators, Azure Data Engineers, Azure AI Engineers, Azure Security Engineers

ServiceNow

- Elite Partner with 9.2+ CSAT Rating
- Program Modules:
 - Services, Sales, Training
- AHEAD Labs
 - Cloud Management Suite Innovation
 - SecOps and GRC Accelerator
 - ITSM Instance / Accelerator
- Product Specializations in SIR, VR, ITSM, Service Mapping, and Discovery
- Certified in every Micro Certification area including Performance Analytics, Application Portfolio, Agile and Test Management, Virtual Agent, Agent Intelligence, and Service Portal
- 150+ Projects completed since 2018
- 10 Architects with 7+ years of experience
- 15+ ITOM projects completed in the last 2 years with 8 certified ITOM implementation specialists
- 200+ Certifications

- 107 Sys Admin, Delivery, and Suite Certifications
- 30 Implementation Specialists
- 5 Authorized Trainers
- 4 Delivery Teams

VMware

- Premier Solution Provider
- 750+ successful implementations, 510 certifications, 11 vExperts, and 5 VCDX's
- Achieved all 5 Master Services Competencies
 - Cloud Management and Automation, Data Center Virtualization, Network Virtualization, VMware Cloud on AWS, and VMware Digital Workspace
- 2020 VMware Americas Partner of the Year Award for Services Excellence
- 2017 VMware Americas Partner Innovation Award for Professional Services
 - Cited for delivering value and performance to a dynamic set of businesses.
- 2015 VMware Americas Solution Provider Partner of the Year
 - Awarded for delivering innovative Virtualization and Cloud technologies.
- Member of VMware Partner Technical Advisory Board
- One of the original four invited to Project Lighthouse (VMware Cloud on AWS)
- Launch partner for VMware Tanzu and Project Pacific