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## Header 1

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:

SO Doc ID: DEP2000000022

Legal Name: VION CORPORATION

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Solicitation Description:

Total of Header Attachments: 1

Total of All Attachments: 1



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 ESR05132000000006667	1

VENDOR
000000193349 VION CORPORATION

**Solicitation Number:** CRFQ 0313 DEP2000000022

**Total Bid :** \$435,629.48      **Response Date:** 2020-05-13      **Response Time:** 13:34:24

**Comments:**

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

<b>Signature on File</b>	<b>FEIN #</b>	<b>DATE</b>
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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				\$316,168.72

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.

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				\$38,649.18

Comm Code	Manufacturer	Specification	Model #
56112005			

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

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				\$39,808.66

Comm Code	Manufacturer	Specification	Model #
56112005			

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

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				\$41,002.92

Comm Code	Manufacturer	Specification	Model #
56112005			

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



# State of West Virginia

Storage Area Network Hardware and Services  
CRFQ 0313 DEP2000000022

## Technical Proposal

May 14, 2020

Submitted To:

Department of Administration, Purchasing  
Division  
2019 Washington Street East  
Charleston, WV 25305-0130  
Guy L. Nisbet  
Email: [Guy.L.Nisbet@wv.gov](mailto:Guy.L.Nisbet@wv.gov)

Submitted By:

ViON Corporation  
Bridget Bradshaw, Account Executive  
196 Van Buren Street  
Herndon, VA 20170  
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### RESTRICTIVE LEGEND

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed, in whole or in part-- for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror, as a result of, or in connection with, the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets appropriately annotated with the following marking:

*"Use or disclosure of proposal data is subject to the restriction on the cover page of this proposal."*

### CAVEAT

Where discrepancies appear between ViON's proposal and ViON supporting documentation, ViON's written word shall take precedence.

### TRADEMARK NOTICE

All logos and product names mentioned in this proposal may be trademarks and/or registered trademarks of their respective companies.



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## DESIGNATED CONTACT FORM

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**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.

Dawn Fabean, Director of Contracts \_\_\_\_\_

(Name, Title)

(Printed Name and Title)  
196 Van Buren Street, Herndon, VA, 20170 \_\_\_\_\_

(Address)  
(571) 353 6000 / (703) 707 0987 \_\_\_\_\_

(Phone Number) / (Fax Number)  
Dawn.Fabean@vion.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.

ViON Corporation \_\_\_\_\_

(Company)

 \_\_\_\_\_

(Authorized Signature) (Representative Name, Title)

Tom Frana, Chairman and CEO \_\_\_\_\_

(Printed Name and Title of Authorized Representative)

05/14/2020 \_\_\_\_\_

(Date)

(571) 353 6000 / (703) 707 0987 \_\_\_\_\_

(Phone Number) (Fax Number)

## ADDENDUM ACKNOWLEDGEMENT FORM

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### 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.

ViON Corporation

Company

  
Authorized Signature

05/14/2020

Date

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



# PURCHASING AFFIDAVIT FORM

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## 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: ViON Corporation

Authorized Signature: [Signature]

Date: 04/15/2020

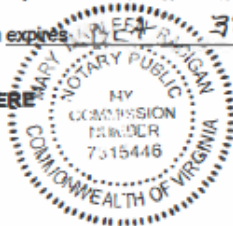
State of VA

County of Shelby, to-wit

Taken, subscribed, and sworn to before me this 15 day of April, 2020

My Commission expires April 30, 2020

AFFIX SEAL HERE



NOTARY PUBLIC [Signature]  
Purchasing Affidavit (Revised 01/19/2018)

## EXECUTIVE SUMMARY

ViON Corporation (ViON), a veteran-owned and privately-held company since 1980, has supported numerous Commercial, Higher Education, Federal, and State Government departments and agencies with enterprise Information Technology (IT) design, supply, and implementation. By analyzing the leading industry Original Equipment Manufacturer (OEM) offerings and solutions, ViON has seamlessly transitioned our customers from one generation of technology to the next.

We enable this with our extensive network of OEM relationships. Vendor-independent, we work with industry partners to develop and provide solutions and equipment tailored to our customers' specific needs. Our 'Customer Intimacy' philosophy and approach are central to what we do as a business and revolve around listening to our customers and partnering with them to develop and deliver what truly fits their needs.

For today's enterprise, implementing data storage strategies can be complicated and, if not executed properly, costly. With our 39 years of experience in enterprise technology, ViON understands the complexity of balancing efficiency and performance with availability, reliability, and sustainability. Adding to your customer experience, our 24x7x365 U.S.-based Support Centers are staffed by certified and cleared engineers who average more than 20 years of industry experience. Our flexible storage solutions and years of customer-focused expertise enables us to provide our customers with enterprise-ready storage, advanced global storage visualization and efficient, scalable, and high-performance hardware.

## TEAM/PARTNERSHIP

ViON proposes state-of-the-art storage solutions to support DEP's digital transformation. Accessing our broad storage portfolio, we have selected the optimal offerings available today to address DEP's unique requirements and have found Dell Technologies' portfolio provides the best-suited technology to meet or exceed DEP's current and future needs.

ViON has historically partnered with Dell Technologies when it is appropriate to meet our customer's specific requirements to deliver modernized infrastructure to Federal, State, and Commercial entities. They are a significant partner whose offerings we incorporate with other OEM solutions to provide our customers with the best fit for their individual requirements.

Dell Technologies' acquisition of EMC Corporation in 2016 created a \$74 billion market leader with an expansive technology portfolio aimed at hybrid cloud, software-defined data center, converged infrastructure, data analytics, mobility, and cybersecurity. ViON leverages that portfolio extensively and supplements with other vendor offerings where additional value can be realized. Our relationship with Dell Technologies extends further than the reselling of its equipment. We have in-depth knowledge of their product roadmaps through our Non-Disclosure Agreement covered relationship, as well as engineers who are trained and certified in Dell Technologies products.

With ViON's extensive experience in State and Federal data center modernization combined with an infrastructure market leader, DEP can trust its next-generation storage solution to be delivered and implemented with efficiency, availability, and reliability.

## TECHNICAL RESPONSE

### QUALIFICATIONS (RFQ 3.0)

Vendor, or Vendor's staff if requirements are inherently are 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.

ViON understands and agrees that all professional services must be performed by the employed of the awarded vendor or equipment manufacturer only.

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.

ViON understands and agrees that professional services are to be coordinated via a single point of contact and that individual will be identified prior to beginning Project.

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

ViON will provide professional services personnel with a minimum of three (3) years of experience with Dell EMC Unity XT per our proposed 'Or Equal' Solution to the NetApp AFF/FAS.

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

ViON has included in our bid response any certifications and resumes for the project staff who will be assigned to the project in Appendix B.

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

ViON understands and agrees to aid in any cases where there may be a language barrier.

### MANDATORY REQUIREMENTS (RFQ 4.0)

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

ViON understands, agrees, and will comply with meeting all mandatory requirements described the sections 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.

ViON understands, agrees, and will comply that all professional services related to this solicitation will 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.

ViON understands, agrees, and will comply that all project planning meets may be held via conference call, in person or web conferencing sessions and will be at least a minimum of three (3) prior to commencement of installation.

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

ViON understands, agrees, and will comply that all required and 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.

ViON understands, agrees, and will comply that the professional services price must be all inclusive and there will be no separate fees 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.

ViON understands, agrees, and will comply with performing all minimum tasks described in the Implementation/Migration Services Phases at both the Charleston and Logan WV site and outlines each task in the sections below.

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.

ViON understands, agrees, and will comply with assisting 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:

ViON understands, agrees, and will comply to 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 will consist of the requirements mentioned in the sections below.

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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply to 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.

ViON understands, agrees, and will comply in assisting the WVDEP with the migration of the NAS (File) storage and file share access, approximately 60 terabytes, from the old production array to the new production array. ViON will ensure this process to be as seamless to the end user as possible and done with no downtime or disruption. ViON understands the downtime restricted to the hours of 6:00PM ET to 7:00AM ET, Monday through Friday and any time on the weekend as needed.

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:

ViON understands, agrees, and will comply in assisting the WVDEP with the installation of the hypervisor software on the server hardware at each location. ViON understands the configuration will include clustering, configuration, and converged networking, attaching and configuring LUNs/volumes from the storage array to the servers and the installation and configuration of the management tools (Red Hat Virtualization Hypervisors and Xen Hypervisors and Management Systems). The clusters are described in the sections below.

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

ViON understands the 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.

ViON understands the 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.

ViON understands the one (1) 3-node cluster at the Logan site to run production workloads the 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.

ViON understands, agrees, and will comply the hardware installation and the commencement of the data migration will be completed within 60 days after the solicitation is awarded.

4.1.2 Storage Array Solution for both, Charleston and Logan "VV 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.

ViON understands, agrees, and will comply with providing a listing of all equipment proposed to complete this solicitation for evaluation to determine if the bid meets all 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.

ViON understands, agrees, and will comply with the minimum requirements based on a NetApp storage array or equal. ViON understands all the technical aspects listed in the sections 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.

ViON understands, agrees, and will comply to provide the dual storage controllers that function as a highly available clustered pair and they meet the specifications in the table below.

REQUIREMENT NUMBER	REQUIREMENT	VIION SOLUTION SPECIFICATIONS	DO WE MEET OR EXCEED REQUIREMENT?
4.1.2.1.1.1.	64 GB of RAM	128GB	Exceeds
4.1.2.1.1.2	8 GB of NVRAM	128GB	Exceeds
4.1.2.1.1.3	1 x RJ45 10gb Ethernet Ports	2 x RJ45 10gb Ethernet Ports	Exceeds
4.1.2.1.1.4	2 x SFP+ 10gb Ethernet Ports	4 x SFP+ 10gb Ethernet Ports	Exceeds
4.1.2.1.1.5	2 x 12gb SAS ports	4 x 12gb SAS ports	Exceeds
4.1.2.1.1.6	2 x 64-bit 12 core intel 1.70GHz CPU	2 x 64-bit 12 core intel 1.70GHz CPU	Meets

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

ViON understands, agrees, and will comply with the storage array solution will have the minimum storage capacity as specified in section 4.1.2.2 and the sections below.

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.

ViON understands, agrees, and will comply that the storage array solution will have 100 TiB of useable formatted flash storage using SSDs, useable capacity will include dedupe, compression, and/or other efficiency technologies as guaranteed by ViON.

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.

ViON understands, agrees, and will comply that the storage array solution will 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:

ViON understands, agrees, and will comply that the storage array solution will provide all the functionality as specified in section 4.1.2.3 and as described in the sections below.

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

ViON understands, agrees, and will comply that the storage array solution will 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

ViON understands, agrees, and will comply that the storage array solution will support single, double, and triple parity RAID. Unity XT All Flash solution includes advanced dynamic raid capabilities that automatically delivers 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 require minimum upgrades of 12 or more drives for even a minor capacity upgrade.

#### 4.1.2.3.3 Must support Volume Encryption

ViON understands, agrees, and will comply that the storage array solution will support volume encryption.

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

ViON understands, agrees, and will comply that the storage array solution will 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.

ViON understands, agrees, and will comply that the storage array solution will 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)

ViON understands, agrees, and will comply that the storage array solution will 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.

ViON understands, agrees, and will comply that the storage array solution will be to create redirect on write snapshots within the storage array.

#### 4.1.2.3.8 Must support zero downtime firmware and OS upgrades within the storage array.

ViON understands, agrees, and will comply that the storage array solution will support zero downtime firmware and OS upgrades within the storage array.

#### 4.1.2.3.9 The storage array must support the following protocols:

ViON understands, agrees, and will comply that the storage array solution will support all protocols as defined in Section 4.1.2.3.9 and in table below.



REQUIREMENT NUMBER	REQUIREMENT	SOLUTION MEETS REQUIREMENT (Y/N)
4.1.2.3.9.1	iSCSI (internet small computer systems interface)	Yes
4.1.2.3.9.2	NFS (network file system)	Yes
4.1.2.3.9.3	pNFS (parallel network file system)	Supports NFS V4 and V4.1 features
4.1.2.3.9.4	Must support VAAI extensions when utilized with VMware vSphere virtualization platform	Yes
4.1.2.3.9.5	Must support ODX extension when utilized with Microsoft Hyper-V virtualization platform	Yes

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

ViON understands, agrees, and will comply that the storage array solution will support at a minimum, the following operations: 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:

ViON understands, agrees, and will comply that the storage array solution will support asynchronous replication of individual storage volumes with existing WVDEP storage array.

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.

ViON understands, agrees, and will comply. Native replication with the existing WVDEP storage array is supported and software is included. The Dell EMC storage array includes native replication software.

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.

ViON understands, agrees, and will comply. 3<sup>rd</sup> party software is not necessary. The Dell EMC storage array includes software for replication.

4.1.2.3.11.3 The NetApp storage arrays on which the storage requirements were based provides 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 part of this solicitation with their bid response or prior to award.

ViON understands, agrees, and will comply that the NetApp storage arrays on which the storage requirements were based provides replications tools for this functionality. ViON has included replication tools as part of the solution. The Dell EMC storage array includes native replication software.

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.

ViON understands that the Storage array at the production site of Charleston, WV will include the specifications as described in Section 4.1.3 and in the sections below.

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

ViON understands, agrees, and will comply the storage array solution will support synchronous replication of individual storage volumes with, 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.

ViON understands, agrees, and will comply that the storage array solution will include 2 x 64-bit 12-core Intel 1.70GHz CPU.

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

ViON understands, agrees, and will comply that the storage array solution will 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.

ViON understands, agrees, and will comply that the storage array solution will 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.

ViON understands, agrees, and will comply that the network equipment will be included for connectivity from the storage device. ViON will ensure all equipment specified in the solicitation will 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.

ViON understands, agrees, and will comply that the network equipment will provide 24 ports 10Gb SFP+ connectivity using equivalent equipment, Dell EMC PowerSwitch S4128.

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

ViON understands, agrees, and will comply that the network equipment will include 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:

ViON understands, agrees, and will comply that the network equipment will provide PCI-Express card to connect servers to storage network as specified in section 4.1.4.3 and as described in the sections 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.

ViON understands, agrees, and will comply that the PCI-Express card to connect servers to storage network will include Sixteen Adaptor card (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 card must all be PCI-Express ® and Low-Profile Network Adaptors

ViON understands, agrees, and will comply that the adaptor card will be PCI-Express® and Low-Profile Network Adaptors.

4.1.4.3.1.2 Adaptor cards must be Dual Port Ethernet

ViON understands, agrees, and will comply that the adaptor cards will be Dual Port Ethernet.

4.1.4.3.1.3 Adaptor cards must be 10gb direct attach/SFP+

ViON understands, agrees, and will comply that the adaptor cards must be 10gb direct attach/SFP+

4.1.4.4 Vendor must provide SFP+ Module as described below:

ViON understands, agrees, and will comply to provide the SFP+ Module as specified in section 4.1.4.4 and described in the sections 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.

ViON understands, agrees, and will comply to provide SFP+ Module including a 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+

ViON understands, agrees, and will comply that the SFP module will be 10Gbase-SR or greater SFP+.

4.1.4.4.1.2 SFP module must be 10 Gig or greater Hot Swappable

ViON understands, agrees, and will comply that the SFP module will be 10 gig and/or greater Hot Swappable.

4.1.4.4.1.3 SFTP must provide 10Gbps or greater.

ViON understands, agrees, and will comply that the SFTP will provide 10Gbps or greater.

4.1.5 Storage Array Solution for Logan site backup.

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

ViON understands, agrees, and will comply that the Storage Array Solution for the Logan site backup will include the specified minimum required that are based on a NetApp FAS 8200 or equal, storage array. ViON ensures to meet the technical aspects as specified in section 4.1.5 and described in the sections below.

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

ViON understands, agrees, and will comply to provide the storage array solution for Logan site backup to 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:

ViON understands, agrees, and will comply to provide the storage array solution that meets the minimum storage capacity as specified in Section 4.1.5.2 and as described below.

##### 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

ViON understands, agrees, and will comply to provide a storage array solution that included 100 TiB of useable formatted flash storage using mini SAS hard drives. ViON understands useable capacity does include dedupe, compression, or other efficiency technologies as guaranteed by ViON.

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

ViON understands, agrees, and will comply to provide support for Storage Array's at Charleston and Logan, WV sites, as specified in section 4.1.6 and as described in the sections below.

##### 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.

ViON understands, agrees, and will comply to provide support including 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:

ViON understands, agrees, and will comply to provide support to adhere to the specified response times described in section 4.1.6.2 and in the sections below.

##### 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).

ViON understands, agrees, and will comply to support response time Priority 1 as specified in Section 4.1.6.2.1.

##### 4.1.6.2.2. Priority 2: Two (2) hours (storage experience infrequent, isolated, or intermittent "panic" or "hang" states, or performance is in degraded state that still allows normal business operations but is inconsistent or less than optimal state.).

ViON understands, agrees, and will comply to support response time Priority 2 as specified in Section 4.1.6.2.2.

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).

ViON understands, agrees, and will comply to support response time Priority 3 as specified in Section 4.1.6.2.3.

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).

ViON understands, agrees, and will comply to support response time Priority 4 as specified in Section 4.1.6.2.4.

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 WVDBP 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.

ViON understands, agrees, and will comply to provide support for configuration of asynchronous replication between the existing production array and the new production array for NAS (File) storage to prepare for cutover for file share access to the new production array.

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.

ViON understands, agrees, and will comply to provide support for configuration of replication of one SAN (Block) storage volume from the existing production array to the new production array.

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

ViON understands, agrees, and will comply to provide 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.

ViON understands, agrees, and will comply to provide 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

ViON understands, agrees, and will comply to configure “Call Home” feature, and will register the solution with ViON support and will 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 communication regarding the removed item which shall include item name, serial number and/or WVDEP property tag (if applicable)

ViON understands, agrees, and will comply to provide advance hardware replacement support. ViON will ensure if the original equipment is not returned to the state, ViON will provide communication regarding the removed item which will 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.

ViON understands, agrees, and will comply to the Knowledge Transfer and Training requirement as specified in section 4.1.7. ViON understands all the requirements specified within Knowledge Transfer and Training as described in the sections below.

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.

ViON understands, agrees, and will comply to providing and performing all implementation work alongside WVDEP staff and we will ensure to provide knowledge transfer on all work being performed.

4.1.8 Software license and additional equipment:

ViON understands, agrees, and will comply to provide software license and additional equipment support as specified in section 4.1.8 and as described in the sections below.

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.

ViON understands, agrees, and will comply. ViON understands the NetApp storage arrays on which the storage requirements were based provides native replication tools for this functionality. The Dell EMC storage array 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.

ViON understands, agrees, and will comply that all software and software licenses need for this solicitation will be included with our bid and we understand software license 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.

ViON understands, agrees, and will comply that all cables and connectors to connect all equipment will work together at full speed and with redundancy. ViON will ensure all power cables will have a C20 end to fit the state's 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,

ViON understands, agrees, and will comply to providing the state with acceptance as specified in section 4.1.9 in order to have the State issue a written letter and change order request to WV Purchasing Division as formal acceptance of the system.

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.

ViON understands, agrees, and will comply that 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.

### **ADDITIONAL REQUIREMENTS (RFQ 6.0 – RFQ 11.0)**

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.

ViON understands and agrees to the requirements specified in section 6.0 Performance.

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.

ViON understands and agrees to the requirements specified in section 7.0 Payment.

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

ViON understands and agrees to the requirements specified in Section 8.0 Travel.

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:

ViON understands and agrees to the requirements described in section 9.0 Facilities Access.

9.1. Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

ViON understands and agrees to identify principal service personnel which will be issued access card 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.

ViON understands and agrees to 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.

ViON understands and agrees to notify the agency immediately of any lost, stolen, or missing card or keys.

9.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

ViON understands and agrees that all personnel performing under this contract will be subject to the agency's security protocol and procedures.

9.5. Vendor shall inform all staff of Agency's security protocol and procedures.

ViON understands and agrees to 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.

ViON understands and agrees all requirements specified in Section 10.0 Vendor Default and also responds below to each requirement.

10.1.1. Failure to perform Contract Services in accordance with the requirements contained herein.

ViON understands and agrees that failure to perform contract services in accordance with requirements contained here will result with vendor default.

10.1.2. Failure to comply with other specifications and requirements contained herein.

ViON understands and agrees that failure to comply with other specifications and requirements contained herein will result with vendor default.

10.1.3. Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

ViON understands and agrees that failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this contract will result with vendor default.

10.1.4. Failure to remedy deficient performance upon request.

ViON understands and agrees that failure to remedy deficient performance upon request will result in vendor default.

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

ViON understands and agrees that the remedies specified in section 10.2 will be available to agency upon vendor default.

10.2.1. Immediate cancellation of the Contract.

ViON understands and agrees that there will be an immediate cancellation of the contract if vendor is to default.

10.2.3. Any other remedies available in law or equity.





ViON understands and agrees that any other remedies available in law or equity to the agency will be considered if vendor defaults.

**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.

ViON provides the requested information in Section 11.1 in the table below.

<b>Contract Manager</b>	Dawn Fabean
<b>Telephone Number</b>	571-353-6000
<b>Fax Number</b>	703-707-0987
<b>Email Address</b>	Dawn.Fabean@vion.com

## APPENDIX A: UNITY XT LIST OF SOFTWARE INCLUDED PROTOCOLS

ViON provides a list of software included and protocols for the Unity XT in the screen shot image below.

Software	
All Inclusive Base Software	<p>Management Software:</p> <ul style="list-style-type: none"> <li>• Unisphere: Element Manager</li> <li>• Unisphere Central: Consolidated dashboard and alerting</li> <li>• CloudIQ: Cloud-based storage analytics</li> <li>• Thin Provisioning</li> <li>• Dynamic Pools - All-Flash Arrays (AFA) only</li> <li>• Data Reduction: Zero Detect/Deduplication/Compression (AFA and All-Flash Pools in Hybrid Arrays, Block &amp; File)</li> <li>• Proactive Assist: Configure remote support, online chat, open a service request, etc.</li> <li>• Quality of Service (Block and VVols)</li> <li>• Dell EMC Storage Analytics Adapter for VMware® vRealize™</li> <li>• File &amp; Block Tiering / Archiving to Public/Private Cloud (Cloud Tiering Appliance)</li> <li>• File-Level Retention (FLR-E &amp; FLR-C)</li> </ul> <p>Unified Protocols:</p> <ul style="list-style-type: none"> <li>• File</li> <li>• Block</li> <li>• VVols</li> </ul> <p>Local Protection:</p> <ul style="list-style-type: none"> <li>• Controller Based Encryption (optional), with self-managed or external key management</li> <li>• Local Point-In-Time Copies (Snapshots and Thin Clones)</li> <li>• AppSync Basic</li> <li>• Dell EMC Common Event Enabler; AntiVirus Agent, Event Publishing Agent</li> </ul> <p>Remote Protection:</p> <ul style="list-style-type: none"> <li>• Native Asynchronous Block &amp; File Replication</li> <li>• Native Synchronous Block &amp; File Replication</li> <li>• MetroSync Manager (optional software to automate synchronous file replication sessions)</li> <li>• Snapshot Shipping</li> <li>• Dell EMC RecoverPoint Basic</li> </ul> <p>Migration:</p> <ul style="list-style-type: none"> <li>• Native Block &amp; File migration from Dell EMC VNX</li> <li>• SAN Copy Pull: Integrated Block migration from 3<sup>rd</sup> party arrays</li> </ul> <p>Performance Optimization for Hybrid Arrays:</p> <ul style="list-style-type: none"> <li>• FAST Cache</li> <li>• FAST VP</li> </ul>
Interface Protocols	NFSv3, NFSv4, NFSv4.1; CIFS (SMB 1), SMB 2, SMB 3.0, SMB 3.02, and SMB 3.1.1; FTP and SFTP; FC, iSCSI and VMware Virtual Volumes (VVols) 2.0



## APPENDIX B: STAFF CERTIFICATIONS/RESUMES

ViON provides the resumes of our personnel on the following pages.

COUNTRY OF RESIDENCE: USA

## PROFILE

IT infrastructure architect with twelve years of experience working in financial services institutions, health care firms, and defense contractors. He has worked extensively on EMC storage arrays and has expertise knowledge of IBM Storage platforms and VMware technologies. His variety of expertise allows him to design, implement, and maintain multi-platform SAN and NAS environments. His extensive experience working on data migration efforts and configuring disaster recovery environments has proven to be a valuable asset to various clients. He listens intently to his customer requirements and communicates complex technical concepts clearly. He integrates easily in to various working environments and works hard to fulfill the requirements of his clients.

## CORE COMPETENCIES

- 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 to clients

## CERTIFICATIONS

- VMware Certified Professional on vSphere 6.0
- DELLEMCDS – Dell EMC Certified Data Science Associate
- DELLEMC IE XtremIO Solutions Specialist
- DELLEMC IE RecoverPoint Specialist
- DELLEMC PE – Dell EMC Platform Engineer Symmetrix Solutions
- DELLEMC IE – Dell EMC Isilon Solutions Specialist
- DELLEMC SA – Dell EMC Storage Administrator Symmetrix/VNX Solutions
- DELLEMCTA – Dell EMC Technology Architect VNX Solutions
- CCNA – Cisco Certified Networking Associate)

## EXPERIENCE

### Storage Architect Resident

Regional utility company required resident to configure new PowerMax arrays, migrate data and setup SRDF/A replication to new DR data center

- Installed and configured the following:
  - Two PowerMax arrays
  - UnityXT arrays
  - Migrated data from old VMAX40K and XIO to new PowerMax arrays using NDM and VMware storage Vmotion
  - SRDF replication between two data centers
  - VMware SRM reconfigured to use new arrays and replication adapters

### Installed and configured new Brocade DCX switches and migrated host from old Cisco 9509 directors

### Storage Architect Resident

Regional bank required resident to configure new VMAX950F array, migrate data and setup SRDF/A replication to new DR data center

- Installed and configured the following:
  - Two VMAX950F arrays
  - Migrated data from old VMAX40K to new VMAX950F using NDM and VMware storage Vmotion
  - SRDF replication between two data centers
- Installed and configured new Brocade DCX switches and migrated host from old Cisco 9509 directors

### Storage Architect Resident

Financial services regulator required resident to configure new VPLEX VS6 and all Flash VMAX

- Installed and configured the following:

- VPLEX VS6 cluster and primary and DR site
- Migrated data from old VS2 to new VS6 cluster and configured new IP replication
- Presented new virtualized VPLEX volumes to VMware 6.0 cluster far,
- Configured EMC ViPR-SRM to monitor and report on the VPLEX cluster and VMware environment

### Storage Architect Resident

Financial services institution required resident to configure new XtremIO DR configuration and VxRail POC

- Installed and configured the following:
  - VCE VxRail appliance for proof of concept project to migrate VDI environment
  - VMware vCenter 6.0 environment integration and VMware NSX isolation for various workloads;
  - VxRail appliance deduplication and compression settings;
  - Log management automation of the VxRail appliance;
  - XtremIO clusters and RecoverPoint appliances (RPA) in production and DR data centers; and
  - DR replication between XtremIO clusters through RecoverPoint.
- Upgraded XtremIO cluster, XMS servers, and RPAs to latest code to support new replication features
- Integrated RecoverPoint and XtremIO data store luns into VMware Site Recovery Manager (SRM)
- Performed knowledge transfer to customer regarding new features of XtremIO and RecoverPoint
- Documented steps for DR testing and failover activities for customer to use whenever necessary
- Migrated data from VMAX-40K and VNX to new XtremIO cluster
- Worked with L3 support to expand XtremIO cluster from one brick to two bricks.

### Storage Architect Resident

Defense contractor required resident to serve as subject matter expert (SME) for international assignment

- Configured and managed multiple Isilon S-Series Node clusters of various sizes.
- Managed support and daily provisioning activities on XtremIO cluster that consisted of three X-bricks and a virtual XMS server; as well as the Cisco 9509 SAN switches and related VSANs for various environments that used them to zone servers to various EMC frames.
- Installed and configured Unity 500F flash array and worked with client to migrate their Microsoft Exchange environment.
- Served as SME regarding VNX block technologies for three VNX5700 frames that hosted various Oracle and SQL DB applications.

### Storage Architect Resident

Financial services institution required resident to configure new XtremIO DR configuration

- Installed and configured XtremIO clusters and RecoverPoint appliances (RPA) in production and DR data centers
- Configured DR replication between XtremIO clusters using RecoverPoint
- Upgraded XtremIO cluster, XMS servers, and RPAs to latest code to support new replication features
- Integrated RecoverPoint and XtremIO data store luns into VMware Site Recovery Manager (SRM)
- Performed knowledge transfer to customer regarding new features of XtremIO and RecoverPoint
- Documented steps for DR testing and failover activities for customer to use whenever necessary
- Migrated data from VMAX-40K and VNX to new XtremIO cluster
- Worked with L3 support to expand XtremIO cluster from one brick to two bricks.  
Added new XtremIO clusters and RPAs into EMC ViPR Storage Resource Manager (SRM) for better managing and reporting

### Storage Architect Resident

Defense contractor required resident to serve as subject matter expert (SME) for international assignment

- Configured and managed multiple Isilon S-Series Node clusters of various sizes
  - Managed 70 node cluster for performance and daily operation activities
  - Managed project to migrate data from non-encrypted to encrypted nodes
- Managed support and daily provisioning activities on XtremIO cluster that consisted of three X-bricks and a virtual XMS server
- Managed support and daily provisioning activities on two VMAX-40K frames
  - Managed FAST-VP settings and adjustments for better performance
  - Managed paths and queue-depth for large VMware clusters to improve performance
- Served as SME regarding VNX block technologies for three VNX5700 frames that hosted various Oracle and SQL DB applications

- Managed Cisco 9509 SAN switches and related VSANs for various environments that used them to zone servers to various EMC frames

### Storage Architect Resident

Healthcare company required resident to assist with DR configuration.

- Configured new VNX 5800 storage frame
  - Created storage pools and configured flash cache
  - Connected Vmware clusters and scanned in new data store luns
  - Vmotion data to new data store luns that will be replicated via RecoverPoint
- Configured RecoverPoint appliances into cluster to allow replication between VNX frames
  - Monitored and adjusted RPA replication along with compression and deduplication for bandwidth reduction
- Installed and configured Vmware SRM to manage DR testing and failover activities
  - Configured EMC RPA SRA for replication management
  - Assisted with DR testing activities using Vmware SRM
- Installed and configured EMC Storage Resource Management vApp cluster
  - Configured storage monitoring and reporting
  - Configured SRM to monitor and report on RecoverPoint RPO
- Installed and configured EMC ViPR Controller vApp cluster
  - Configured ViPR controller to manage VNX storage pools and Qlogic SAN switches
  - Used ViPR controller to automate provisioning activities across two VNX frames

### Storage Operations Resident

Insurance company required resident to assist with DR testing activities and overall procedure documentation effort.

- Configured VMAX and VNX storage to work with Vmware Site Recovery Manager
  - Configured SRA adapter to work with VMAX SRDF/A replication
  - Configured RPA adapter to work with VNX RPA appliance
- Documented DR testing procedures and storage operations practices

### Solutions Architect Resident

Health Care Company required EMC storage best practices knowledge transfer and EMC SRM configuration.

- Installed EMC Storage Resource Management (SRM) Suite
  - Configured VMAX, Cisco MDS and Vcenter Solutions Packs
- Configured ESRS server to connect back to EMC for monitoring and reporting
- Performed knowledge transfer to the client engineers regarding all EMC technologies

### Solutions Architect Resident

Banking Institution required assistance installing/configuring new VMAX frames in production and DR data center and migrating Vmware servers.

- Designed and configured VMAX-10K frames in production and DR data center
- Configured Recovery Point replication between the two data centers using Vmware SRM
- Migrated Vmware environment from old DMX to new VMAX (Vmotion)
- Conducted Disaster recovery test using VMAX, SRM, and Recovery Point
- Performed knowledge transfer to client engineers regarding all EMC technology

### Solutions Architect Resident

Health insurance company performed a VMAX proof of concept to test migrating data from IBM to EMC platforms

- Designed and installed VMAX-10 frame
- Migrated data from older IBM frames to new VMAX frame and conduct performance stress testing
- Integrated Vmware environment into new VMAX frame

## TECHNICAL SKILLS SUMMARY

### HARDWARE

Vmware, VMAX/DMX, VNX, VG Series, XtremeIO, 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, Prospere, 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

## EDUCATION

- University of North Carolina at Charlotte, Hong Kong, China Campus - MBA (Finance)
- Johnson C. Smith University - BS (Computer Engineering)

## PROFESSIONAL DEVELOPMENT

- Vmware VCP 6.0
- VxRail Deployment and support
- GreenPlum Deployment and support
- Isilon Architecture and Installation
- VMware Site Recovery Manager Configuration
- ITIL Foundations

## LANGUAGES

Mandarin and Cantonese – Intermediate speaking

**Matthew Russo**

***Advisor Services Project Manager***

**Education and Certifications**

- Masters of Science, Information Resource Management, Central Michigan University, May 2001
- Bachelors of Science, Information Technology, Central Michigan University, December 2008

**Experience**

**Dell Technologies                      May 2019– Present**

*Advisor Services Project Manager*

- Managed complex enterprise and commercial IT implementation and upgrade projects
- Drive project completion as quickly and efficiently as possible.
- Coordinate meetings and status updates with all project stakeholders.
- Building and Maintaining customer relationships and expectations.
- Oversaw project logistics, activities, financials, and revenue

**Dell EMC                      January 2011 – May 2019**

*Senior Account Service Engineer*

- Performed installations and upgrades on: Symmetrix, VNX, Avamar, Data Domain, Centera, Celerra, Clariion, Recover point, VPLEX, Isilon and Atmos.
- Facilitated project work from start to finish.
- Operated as a subject matter expert on EMC products for Michigan and Northwestern Ohio.
- Assisted team by self-training to fill team skill gaps including: Avamar, Data Domain, Centera, Isilon, Symmetrix, VPLEX, Atmos and ESRS.
- Managed Customer Support service requests.
- Exceeded expectations on all metrics.
- Consistently exceeded customer expectations in implementation projects.
- Leadership skills through cross training and helping team members.

**Workforce Software                      May 2010 – January 2011**

*Technical Implementation Specialist*

- Created custom Java scripts to build complex time and attendance configurations.
- Extensive SQL usage to create custom queries and reports.
- Configured software platform for client implementation.
- Configured physical time clocks with JavaScript.



## **Rob Ritchie**

### ***Customer Solutions Engineer II***

#### **Education and Certifications**

- Associate's Degree, Networking Engineering, Lord Fairfax Community College, 1999
- Associate's Degree, Computer Programming, Lord Fairfax Community College, 1999
- VMware VCP6-DCV (ID: VMW-01385019S-00591844)
- VMware VCP5-DCV (ID: VMW-01385019S-00591844)
- VMware VCP6-CMA (ID: VMW-01385019S-00591844)
- VMware VCP-NV 2019 (ID: VMW-01385019S-00591844)
- Red Hat RHCSA v7 (ID: 160-070-926, 04/2016 - 04/2019)
- Cisco CCNA: Data center (ID: CSC011883608, 06/2015 - 06/2021)
- Cisco CCNA: Route and Switch (ID: CSC011883608, 06/2013 - 06/2021)

#### **Experience**

##### **ViON Corporation                      September 2013 – Present**

###### ***Customer Solutions Engineer II***

- Recruited to assist in the company's support center and aide in laying out the groundwork for building and training on our Cloud and Big Data solutions. Successfully built several products within given deadlines in our Solutions Showcase which were designed for client demonstrations.
- As a part of the virtual Cloud and Big Data teams, I participated in several builds of products for clients with a focus on the infrastructure and remote management of the environments.
- Later became a team member of the managed services organization for existing and prospective clients supporting Red Hat, VMware vSphere, Windows, and Cisco UCS & Nexus as well as Dell hardware. Created, documented, and executed processes for patching and updating firmware, OS and Hadoop platforms for our managed services customers.
- Worked with our Solutions Architects with build, documentation, and design for current solutions as well as potential products.
- Successfully built, migrated and managed our vSphere environment housed in our datacenter space which hosts our ordering portal for internal and external clients as well as several other projects. The environment includes Cisco Nexus switches, UCS servers, Dell servers and storage, VMware vSphere 6 and multiple RHEL/CentOS and Windows VMs.
- Assisting the lab manager in support of Pre and Post Sales Engineers, internal training and client proof of concepts in the support of sales.
- Currently maintaining a clearance for this position.

##### **CenturyLink (formerly Qwest Communications)**

**March 2002 – September 2013**

### *Information Systems Engineer*

- Member of a large team providing 24x7 support, troubleshooting and management services for over 200 clients hosted in our three datacenters in Sterling, Virginia. Experience involved troubleshooting and administration of Linux, Windows, VMware and Cisco IOS based network devices.
- Performed monitoring, backups/restores and day-to-day management according to SLAs for many of our clients depending on contracted support levels.
- As part of this team we were the onsite backups for the facilities team after hours with duties including monitoring UPSs, generators and environmental. Assisted the facilities team in getting our environmental and power monitoring infrastructure set up and in production. This infrastructure was tied into our remote client response team where ticketing was automatically generated.
- Partnered with internal teams including facilities, storage and backup, firewall, network and sales implementing new clients as well as supporting existing client installations.
- Maintained different levels of state and federal clearance for this position. Highest level of clearance obtained was TS/SCI at the time I left the company.

### **Qwest Cyber Solutions      March 2001 – March 2002**

#### *Unix and Windows Systems Administrator*

- Member of a small team providing 24x7 support for an application service provider which was a Qwest Communications owned subsidiary. As the only second shift Engineer I became proficient at working independently to solve problems without needing to escalate to an on-call senior engineer.
- My responsibilities included monitoring OS and network, monitoring backups, performing restores, fulfilling client requests they came in and working with the database and applications teams as needed.
- We were responsible for troubleshooting all problems as well as opening and escalating tickets and working with the vendors on hardware and software issues.
- Client environments included mostly Solaris, HP-UX, Windows and some Linux servers as well as Cisco IOS based switches and routers.
- Maintained different levels of clearance for this position.

### **National Fruit Product Co.      March 2000 – March 2001**

#### *Unix Systems Administrator*

- Managed a small HP-UX 11 environment as well as several standalone Red Hat Linux servers in our main office and remote locations.
- Assisted in administration of our PBX.

### **National Fruit Product Co.      September 1999 – May 2000**

#### *PC Technician*

- Managed a small HP-UX 11 environment as well as several standalone Red Hat Linux servers in our main office and remote locations.
- Assisted in administration of our PBX.