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.

Solicitation Response(SR) | Dept: 0313 | ID: ESR12082100000003522 | Ver.: 1 | Function: New | Phase: Final | Modified by batch , 12/08/2021

Header 📎 4

List View

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

Procurement Folder: 967819	**SO Doc Code:** CRFQ
Procurement Type: Central Purchase Order	**SO Dept:** 0313
Vendor ID: 000000181088	**SO Doc ID:** DEP2200000019
Legal Name: ROLTA ADVIZEX TECHNOLOGIES LLC	**Published Date:** 11/19/21
Alias/DBA:	**Close Date:** 12/8/21
Total Bid: $54,983.11	**Close Time:** 13:30
Response Date: 12/08/2021	**Status:** Closed
Response Time: 9:00	**Solicitation Description:** BTO145-21 NetApp FAS (FlexArray Storage) 8200 or Equal & Sup
Responded By User ID: mbostaph	
First Name: Mika	**Total of Header Attachments:** 4
Last Name: Munoz	**Total of All Attachments:** 4
Email: mmunoz@advizex.com	
Phone: 304-615-3301	

Proc Folder:	967819
Solicitation Description:	BTO145-21 NetApp FAS (FlexArray Storage) 8200 or Equal & Sup
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2021-12-08 13:30	SR 0313 ESR12082100000003522	1

VENDOR
000000181088 ROLTA ADVIZEX TECHNOLOGIES LLC

Solicitation Number: CRFQ 0313 DEP2200000019

Total Bid: 54983.11000000000058207660913 **Response Date:** 2021-12-08 **Response Time:** 09:00:49

Comments: Please contact Mika Munoz at mmunoz@advizex.com with any questions. Thank you.

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor
Signature X   **FEIN#**   **DATE**

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	NetApp FAS (FlexArray Stor) 8200 or equal & add. equip 4.1.1	1.00000	EA	42395.810000	42395.81

Comm Code	Manufacturer	Specification	Model #
43201802			

Commodity Line Comments: Please see attached documents for solution details.

Extended Description:

BTO145-21 NetApp FAS (FlexArray Storage) 8200 or equal and additional equipment 4.1.1
See section 4.1.1 through 4.1.1.7

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Technical Support and Parts Replacement 4.1.2				12488.05

Comm Code	Manufacturer	Specification	Model #
81111812			

Commodity Line Comments:

Extended Description:

Technical Support and Parts Replacement
See section 4.1.2

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Software Licenses 4.1.4	1.00000	EA	0.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43230000			

Commodity Line Comments:

Extended Description:

Software Licenses
See section 4.1.4

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Training 4.1.3				99.25

Comm Code	Manufacturer	Specification	Model #
86000000			

Commodity Line Comments:

Extended Description:

Training
See section 4.1.3

Item	Qty	Sku	Description
Unity 480F All-Flash DPE DS - AMER	1	210-ASLL	Unity 480F DPE 25x2.5" Dell Field Rack
Unity 480F All-Flash DPE DS - AMER	1	528-CNRZ	File Level Retention=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSB	Unity ISCSI=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSC	Unity NFS=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSD	File System Events Publishing=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSE	Unity D@RE=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSF	Unity VASA/vVols=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSH	Unity Replication=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSI	Unity Quality of service=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSJ	Unity ESA Adapter=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSK	Inline Compression=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSL	Unity EMC Proactive Assist=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSM	Cloud Tiering
Unity 480F All-Flash DPE DS - AMER	1	528-CNSN	Unity Local Copies
Unity 480F All-Flash DPE DS - AMER	1	528-CNSO	Unity Fibre Channel=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSQ	Unity Antivirus=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSR	Unity Unisphere Central=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSS	Operating System V4.0=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNST	Unity CIFS=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSU	Unity Thin provisioning=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSV	Unity Unisphere=IC
Unity 480F All-Flash DPE DS - AMER	1	528-CNSW	IP Multi-Tenancy=IC
Unity 480F All-Flash DPE DS - AMER	16	400-BFUP	Unity F 3.84TB ALL FLASH 25X2.5 SSD
Unity 480F All-Flash DPE DS - AMER	1	565-BBHY	Unity 2X4 Port IO 10GbE OPT AF
Unity 480F All-Flash DPE DS - AMER	2	470-AEFT	2M SFP+ to SFP+ 25G Passive Twinax CBL AF
Unity 480F All-Flash DPE DS - AMER	1	379-BDOI	Pair of C13/C14 cables (Highline Power) or C19/C20 cables (480/680 Lowline Power) included with DPE
Unity 480F All-Flash DPE DS - AMER	1	343-BBMO	Unity DPE Install Kit AF
Unity 480F All-Flash DPE DS - AMER	1	379-BDPD	ISG Product (info)

Unity 480F All-Flash DPE DS - AMER	1	826-6597	Dell Hardware Limited Warranty Initial Year
Unity 480F All-Flash DPE DS - AMER	1	826-6606	ProSupport: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch 1 Year
Unity 480F All-Flash DPE DS - AMER	1	826-6632	ProSupport: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch 1 Year Extended
Unity 480F All-Flash DPE DS - AMER	1	826-6633	ProSupport Mission Critical 7x24 HW Tech Support and Assistance 2 Years
Unity 480F All-Flash DPE DS - AMER	1	955-9041	Dell Hardware Limited Warranty Plus On Site Service Extended Year
Unity 480F All-Flash DPE DS - AMER	1	989-3439	Thank you choosing Dell ProSupport. For tech support, visit //www.dell.com/support or call 1-800- 945-3355
Unity 480F All-Flash DPE DS - AMER	16	826-9576	ProSupport: Mission Critical 4-Hour 7x24 On-Site Medium Capacity SSD Add-On, 2 Years
Unity 480F All-Flash DPE DS - AMER	1	826-9745	ProSupport Mission Critical, Software Support Maintenance 2 Years
Unity 480F All-Flash DPE DS - AMER	1	825-0177	Prodeploy for Unity X80 DPE Hybrid and All Flash
Unity 480F All-Flash DPE DS - AMER	1	825-0178	Prodeploy for Unity X80 DPE Hybrid and All Flash Deployment Verification
Unity 480F All-Flash DPE DS - AMER	1	844-3672	Education Services-Dell EMC Unity XT Basics On-Demand Training
Unity 480F All-Flash DPE DS - AMER	1	332-1286	US Order
			Subtotal
AppSync Basic - All Flash DS - AMER	1	210-ASON	AppSync Unity AF
AppSync Basic - All Flash DS - AMER	1	658-BEJW	AppSync Bsc for Unity 400F/450F/480F=IC
AppSync Basic - All Flash DS - AMER	1	900-9997	On-Site Installation Declined
AppSync Basic - All Flash DS - AMER	1	827-0430	ProSupport Mission Critical, AppSync, All-Flash, Basic, Software Support/Maintenance 2 Years
AppSync Basic - All Flash DS - AMER	1	626-BBBG	Storage Software Info
AppSync Basic - All Flash DS - AMER	1	929-3709	Thank you for Your Order
AppSync Basic - All Flash DS - AMER	1	935-6720	Thank you for Your Order
			Subtotal
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	210-ATUQ	RecoverPoint for Unity XT AF

Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	528-COYI	RP BASIC REM FOR UNITY =IC
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	528-COYJ	RP BASIC LOC FOR UNITY =IC
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	900-9997	On-Site Installation Declined
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	825-7318	ProSupport Mission Critical, RecoverPoint Basic - All-Flash, Software Support/Maintenance, 2 Years
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	626-BBBG	Storage Software Info
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	929-3709	Thank you for Your Order
Dell EMC RecoverPoint for Unity XT All Flash NVI - AMER	1	935-6720	Thank you for Your Order

Proc Folder:	967819	Reason for Modification:
Doc Description:	BTO145-21 NetApp FAS (FlexArray Storage) 8200 or Equal & Sup	

Proc Type:	Central Purchase Order		

Date Issued	Solicitation Closes	Solicitation No	Version
2021-11-19	2021-12-08 13:30	CRFQ 0313 DEP2200000019	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000 181088

Vendor Name : Advizex Technologies, LLC

Address : 6450

Street : Rockside Woods Blvd. S Suite 190

City : Independence

State : OH   Country : USA   Zip : 44131

Principal Contact : Mika Mira

Vendor Contact Phone: 304-615-3301   Extension:

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor
Signature X _m.k.m_   FEIN# 371504931   DATE 12/8/21

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

ADDITIONAL INFORMATION

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection to establish a contract for the one-time purchase of NetApp FAS (FlexArray Storage) 8200 or equal per the attached specifications and terms and conditions.

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	NetApp FAS (FlexArray Stor) 8200 or equal & add. equip 4.1.1	1.00000	EA	$42,395.81	$42,395.81

Comm Code	Manufacturer	Specification	Model #
43201802			

Extended Description:

BTO145-21 NetApp FAS (FlexArray Storage) 8200 or equal and additional equipment 4.1.1

See section 4.1.1 through 4.1.1.7

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Technical Support and Parts Replacement 4.1.2			$12,488.05	$12,488.05

Comm Code	Manufacturer	Specification	Model #
81111812			

Extended Description:

Technical Support and Parts Replacement

See section 4.1.2

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Software Licenses 4.1.4	1.00000	EA	$0.00	$0.00

Comm Code	Manufacturer	Specification	Model #
43230000			

Extended Description:

Software Licenses

See section 4.1.4

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Training 4.1.3			$99.25	$99.25

Comm Code	Manufacturer	Specification	Model #
86000000			

Extended Description:

Training

See section 4.1.3

SCHEDULE OF EVENTS

Line	Event	Event Date

	Document Phase	Document Description	Page 4
DEP2200000019	Final	BTO145-21 NetApp FAS (FlexArray Storage) 8200 or Equal & Sup	

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

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.

Mika Munoz, Account Executive
_____
(Name, Title)
Mika Munoz, Account Executive
_____
(Printed Name and Title)
6480 Rockside Woods Blvd. S Suite 190 Independence, OH 44131
_____
(Address)
304-615-3301
_____
(Phone Number) / (Fax Number)
mmunoz@advizex.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.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

Advizex Technologies, LLC
_____
(Company)

~~Mika Muñoz~~ Mika Munoz Account Executive
_____
(Authorized Signature) (Representative Name, Title)

Mika Munoz Account Executive
_____
(Printed Name and Title of Authorized Representative)

12-8-21
_____
(Date)

304-615-3301
_____
(Phone Number) (Fax Number)

Revised 07/01/2021

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.
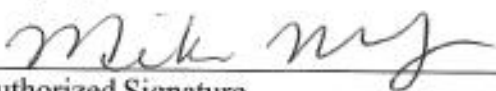
Addendum Numbers Received:
(Check the box next to each addendum received)

☐ Addendum No. 1   ☐ Addendum No. 6
☐ Addendum No. 2   ☐ Addendum No. 7
☐ Addendum No. 3   ☐ Addendum No. 8
☐ Addendum No. 4   ☐ Addendum No. 9
☐ Addendum No. 5   ☐ 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.

Advizex Technolgies, LLC

Company

[signature]

Authorized Signature

12-8-21

Date

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

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 exceed 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: Advizex Technologies, LLC

Authorized Signature: _(signature)_   Date: 11-12-21

State of West Virginia

County of Wood , to-wit:

Taken, subscribed, and sworn to before me this 12th day of November , 20 21

My Commission expires February 06 , 20 23

NOTARY PUBLIC Brenda M. Malone-Pence

AFFIX SEAL HERE

Purchasing Affidavit (Revised 01/19/2018)

The Dell-EMC Unity XT 480F All Flash Meets or exceeds the specifications requested.

4.1.1.1

The UnityXT480F Storage array includes dual storage controllers that function as a highly available clustered Active/Active pair.

4.1.1.1.1-4.1.1.1.6

The Advizex recommended Unity 480XT includes:

384GB of RAM
340GB NVRAM
(2) RJ45 10Gb Ethernet Ports
(8) SFP+ 10Gb Ethernet Ports or 16Gb Fiber Channel (Up to 16)
(4) 12 Gb SAS ports (expandable to 12)
(4) Intel 64Bit CPUS at 1.8Ghz. 32 cores

4.1.1.2.1

The All-flash Dell-EMC Unity XT solution proposed in response to WV DEP's solicitation contains 121Tib of usable after spare and raid protection storage capacity.

Because the Unity XT all flash is a modern all flash storage array with Advanced in-line data reduction – this configuration is **guaranteed** (within Dell Future Proof Program guidelines) to deliver 121 TiB of effective, usable capacity. Advizex's knowledge of WV DEP workloads would lead us to assume that your Effective capacity would exceed what it would be with guaranteed minimum Data Reduction ratios.

Advizex's recommendation is to leverage a modern, All flash array. Our experience shows that Dell All Flash storage delivers massive performance improvements, along with lower acquisition cost per TiB of data stored, as well as significantly reduced energy consumption, longer lifecycle, and lower HW warranty and maintenance costs. This Advizex response meets these goals as proposed.

4.1.1.2.2

The All-Flash Unity 480XTF is 100% Flash.

4.1.1.2.3

Unity XT 480 RAW max capacity is 4 PB. Unlike most competitive products including NetApp FAS, Unity 480XT can accept incremental upgrades of one (1) drive at a time. This massively reduces the cost of minor capacity upgrades. In this configuration, each additional drive adds approximately 10TB of capacity for minimal cost.

4.1.1.2.4

The Unity XT480 supports clustering capability of 8 controllers providing live mobility of storage volumes between controllers with zero downtime.

4.1.1.3.1
The Unity XT480 provides a single HTML 5 Web interface for both block and file storage functionality.

4.1.1.3.2

The Unity XT480 has Microsoft shadow copy integration such that the storage system creates shadow copy information on a read only storage snapshot LUNs that are accessible by Microsoft servers to restore using the previous versions features available to end users in a self-help manner.

4.1.1.3.3

The Unity XT 480 has a variety of features capable of blocking common ransomware file extensions. Not limited to static policies.

4.1.1.3.4

The Unity XT480 exceeds the data protection capabilities of legacy single, double, triple parity RAID. The Unity XT All flash leverages advanced dynamic RAID capabilities that automatically deliver RAID protection, automated distributed Sparing, as well as SSD health and endurance management. This delivers the highest data protection, faster rebuild times, and allows single drive capacity additions. The Legacy Static RAID leveraged by other solutions require expensive 12 or more drives additional for the smallest capacity needs.

4.1.1.3.5

The Unity XT 480 includes Volume Encryption with built in key management features

4.1.1.3.6

The Unity XT480 incudes advanced, in-line (not postprocessed) per volume deduplication that can be enabled or disabled, during and after volume creation.

4.1.1.3.7

The Unity XT480 incudes advanced, in-line (not postprocessed) per volume compression that can be enabled or disabled, during and after volume creation.

4.1.1.3.8

The Unity XT480 supports the ability to natively offload/de-stage cold data to the on and/or off premise private or commercial cloud (S3).

4.1.1.3.9

The UnityXT 480 can create redirect on write snapshots within the storage array, it also able to replicate native snapshots between the storage contained in the WV Office of Technology Converged Data Center Solution (commonly known as DC2.0). This could be used by WV DEP to house data snapshots from production to accelerate any DR recovery activity, or as redundant copies.

4.1.1.3.10

The UnityXt 480 is fully redundant and supports zero-downtime firmware and OS upgrades for the storage controllers, as well as drives.

4.1.1.3.11

The Unity XT 480 includes hot spare drive capability

4.1.1.4.1-4.1.1.4.4

Dell EMC Unity XT 480 supports the following protocols: **NFS**v3, **NFS**v4, **NFS**v4.1 (**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.

The Unity XT 480 supports ODX extension when utilized with Microsoft Hyper- V virtualization platform.

4.4.4.5.1-4.1.1.5.5

The proposed Unity XT 480 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.

4.1.1.6

The Unity XT 480 includes a wide variety of virtual storage console capabilities including from with Citrix Xenserver. Unity XT also includes fully documented REST API's, support for CSI (Container Storage Interface) drivers, Ansible plug-ins, as well as other ways to fully provide automated storage reporting and management from with integrated applications.

4.1.1.7

The Unity XT 480 solution pricing is all-inclusive as requested.

4.1.2.2

Dell EMC ProSupport Mission Critical is included for (2) two years that meets or exceeds the requested SLA/SLO.

Advizex recognizes that WV DEP needs the support and maintenance duration to extend one (1) year from the date of equipment testing and acceptance by WVDEP. In order to exceed this requirement, Advizex is including an additional year of maintenance and support totaling two (2) years which provides approximately 1 year for WV DEP to complete testing and acceptance.

4.1.2.3

Unity 480XT supports field based storage controller upgrades without downtime, and as a shared storage solution is 100% capable of supporting new compute resources, new interface types, or new switching hardware.

4.1.2.4

Configuration of the storage and readiness for WV DEP utilization is included in the solution. In addition, On-site installation, and provisioning of Call Home support features, is included.

4.1.2.5

The Unity XT480 includes advanced hardware replacement for the term of the initial support term, and any subsequent extensions of coverage. The OEM will provide notification regarding replaced or removed components which will include item name, serial number and/or WVDEP property tag if applicable.

4.1.3.1

OEM provided installation services will perform installation and provide knowledge transfer to WV DEP personnel.

4.1.3.2

OEM provided installation services and/or Advizex will train DEP personnel to perform day to day administrative activities. Advizex is also including a Dell Education services Unity XT basics On-demand training class that can be used within 1 year of installation.

4.1.3.3

OEM provided installation serviced and/or Advizex will train DEP personnel to perform system maintenance such as software or firmware upgrades. Advizex is also including a Dell Education services Unity XT basics On-demand training class that can be used within 1 year of installation.

4.1.4.1

The Dell EMC Unity XT 480 solution is an all-inclusive base software licensed solution. One of the major unique advantages of Dell EMC Unity XT 480 is that it is the same storage product that is included within WV OOT DC2.0 converged data center solution. For WVDEP, this is a major advantage over all other storage products.

The following are unique licensed software capabilities for Dell EMC Unity XT that are included for native data protection and migration to/from the converged solution in WV OOT DC 2.0.

- Native Asynchronous Block & File Replication, including bandwidth throttling
- Native Synchronous Block & File Replication, including bandwidth throttling
- Snapshot Shipping
- Dell EMC RecoverPoint Basic

4.1.4.2

All software and software licenses needed for this solicitation (as well as many others) are included in our bid. WV DEP will retain all licenses.

DELL EMC UNITY XT STORAGE SERIES

Simplify the path to IT transformation and unlock the full potential of your data capital with the new Dell EMC Unity XT storage arrays that feature up to 2X more IOPS, more memory, and up to 50% more drives than previous Dell EMC Unity models. These All-Flash and Hybrid storage systems with dual-active controller architecture and enterprise-class features are designed for performance, optimized for efficiency with up to 5:1 data reduction, and built to simplify your multi-cloud journey.

Architecture

Based on the powerful family of Intel Xeon™ processors, Dell EMC's Unity XT storage systems implement an integrated architecture for block, file, and VMware VVols with concurrent support for native NAS, iSCSI, and Fibre Channel protocols. Each system leverages dual storage processors, full 12 Gb SAS back end connectivity and Dell EMC's patented multicore architected operating environment to deliver unparalleled performance & efficiency. Additional storage capacity is added via Disk Array Enclosures (DAEs).

Physical Specifications

	380F/380	480F/480	680F/680	880F/880
Min/Max Drives	6/500	6/750	6/1000	6/1500
Array Enclosure	A 2U Disk Processor Enclosure (DPE) with twenty five 2.5" drives			
Drive Enclosure (DAE - Disk Array Enclosure)	All-Flash (F) models support 2.5" drives in 2U twenty five drive and 3U eighty drive trays. Hybrid models support 2.5" drives in 2U twenty five drive and 3U eighty drive trays; and 3.5" drives in 3U fifteen drive trays.			
Standby Power System	Dell EMC Unity systems are powered by 2 power supplies (PS) per DPE/DAE. Each power supply can provide power to the entire module if the peer PS has been removed or is faulted. DPE power during a power failure is provided by a Battery Back Up (BBU) module. BBU is located within the SP enclosure and provides power to a single module (power zone)			
RAID Options	1/0, 5, 6			
CPU per Array	2 x Intel CPUs, 12 cores per Array, 1.7GHz	2 x dual-socket Intel CPUs, 32 cores per Array, 1.8GHz	2 x dual-socket Intel CPUs, 48 cores per Array, 2.1GHz	2 x dual-socket Intel CPUs 64 cores per Array, 2.1GHz
System Memory/Cache per Array	128 GB	192 GB	384 GB	768 GB
Max FAST Cache per Array*	Up to 800 GBs	Up to 1.2 TBs	Up to 3.2 TBs	Up to 6.0TBs
Total Cache[A]	Up to 928 GBs	Up to 1.39 TBs	Up to 3.58 TBs	Up to 6.76 TBs
Max Mezzanine cards per Array[B]	NA	2	2	2
Max IO Modules per Array[C]	4	4	4	4

DELL EMC UNITY XT

	380F/380	480F/480	680F/680	880F/880
Embedded SAS IO Ports per Array	4 x 4 lane 12Gb/s SAS ports for BE (back end) Connection	4 x 4 lane 12Gb/s SAS ports for BE Connection	4 x 4 lane 12Gb/s SAS ports for BE Connection	4 x 4 lane 12Gb/s SAS ports for BE Connection
Optional SAS IO ports per Array	NA	8 x 4 lane or 4 x 8 lane 12Gb/s SAS ports (for BE Connection)	8 x 4 lane or 4 x 8 lane 12Gb/s SAS ports (for BE Connection)	8 x 4 lane or 4 x 8 lane 12Gb/s SAS ports (for BE Connection)
Base 12 Gb/s SAS BE Buses per Array	2 x 4 Lane	2 x 4 Lane	2 x 4 Lane	2 x 4 Lane
Max 12 Gb/s SAS BE Buses per Array	2 x 4 Lane	6 x 4 Lane; or 2 x 4 lane and 2 x 8 lane	6 x 4 Lane; or 2 x 4 lane and 2 x 8 lane	6 x 4 Lane; or 2 x 4 lane and 2 x 8 lane
Max FE (front end) Total Ports per Array (all types)	24	24	24	24
Max Initiators per Array	1,024	2,048	2,048	4,096
Max FC Ports per Array	20	16	16	16
Embedded 10GbaseT Ports per Array	4	NA	NA	NA
Embedded CNA ports per Array	4 ports: 8/16 Gb FC[D], 10Gb IP/iSCSI, or 1Gb RJ45	NA	NA	NA
1 Gbase-T/iSCSI Max Total Ports per Array	24	24	24	24
10/25 GbE/iSCSI Max Total Ports per Array	24 – 10GbE 16 – 25GbE	24	24	24
Max Raw Capacity[E]	2.4 PBs	4.0 PBs	8.0 PBs	16.0 PBs
Max SAN Hosts	512	1,024	1,024	2,048
Max Number of Pools	20	30	40	100
Max Number of LUNs per Array	1,000	1,500	2,000	6,000
Max LUN Size	256 TB	256 TB	256 TB	256 TB
Max file systems per Array	1000	1500	2000	4000
Max File System Size	256 TB	256 TB	256 TB	256 TB
Max attached snapshots per Array (Block)	1000	1500	2000	6000
IOPS[F] (All Flash Models 380F – 880F)	up to 600K	up to 1.68M	up to 2.36M	up to 2.56M
OS Support	See the Dell EMC Simple Support Matrix on dellemc.com			

[A] Specific to Hybrid Arrays
[B] One Mezzanine card per Storage Processor (SP), mirrored.
[C] Two IO Modules per Storage Processor (SP), mirrored.
[D] 16Gb available in both single mode and multimode.
[E] Maximum raw capacity will vary based on drive sizes available at time of purchase.
[F] 100% sequential Reads, 4K block size, thick LUNs. Based on internal testing (June 2019). Your results may vary.

Connectivity

Connectivity options via Mezzanine cards and IO modules for both the file for NFS/SMB connectivity and the block storage for FC and iSCSI host connectivity (see above table for number of modules supported per SP).

Connectivity Options

Type	Description	Details
Mezzanine card or IO Module	Four-Port 10Gbase-T Module (File & Block)	Four port 10Gbase-T Ethernet IP/iSCSI module with four 10Gbase-T Ethernet ports with copper connection to Ethernet switch
Mezzanine card or IO Module	Four-Port 10 Gb/s Optical Module (File & Block)	Four port 10GbE IP/iSCSI module with choice of SFP+ optical connection or active/passive twinax copper connection to Ethernet switch
Mezzanine card or IO Module	Four-Port 25 Gb/s Optical Module (File & Block)	Four port 10GbE IP/iSCSI module with choice of SFP+ optical connection or passive twinax copper connection to Ethernet switch
IO Module	Four-Port 32 Gb/s Fibre Channel Module (Block only)	Four port FC module with four ports auto-negotiating to 4/8/16 or 8/16/32 Gbps; uses single mode or multimode optical SFP and OM2/OM3/OM4 cabling to connect directly to host HBA or FC switch
IO Module	Four-Port 12 Gb/s SAS V3.0 Module*	Four port SAS module, used for back-end storage (DAE) connectivity to Storage Processors. Each SAS port has 4 lanes/port @ 12Gbps, delivering 48Gbps nominal throughput. Also available specifically for the 80 drive DAE is 8 lane connectivity utilizing a pair of SAS ports to deliver high bandwidth for added performance.
	* For 480F/480, 680F/680 and 880F/880 models	

Maximum Cable Lengths

Shortwave optical OM4: 125 meters (16 Gb) 190 meters (8 Gb), 400 meters (4 Gb), and 500 meters (2 Gb)

Back-end (Drive) Connectivity

Each storage processor connects to one side of each of two redundant pairs of four-lane x 12 Gb/s Serial Attached SCSI (SAS) buses, providing continuous drive access to hosts in the event of a storage processor or bus fault. All models require four "system" drives and support a platform specific maximum number of disks (see Physical Specifications table above). 107 GBs per system drive on the Dell EMC Unity XT 380 models and 150 GBs on the Dell EMC Unity XT 480, 680, and 880 models is consumed by the operating environment software and data structures.

Disk Array Enclosure (DAE)

	25 X 2.5" Drive DAE	80 X 2.5" Drive DAE	15 X 3.5" Drive DAE (Hybrid Arrays only)
Drive Types Supported	FLASH & SAS	FLASH & SAS	NL-SAS
Controller Interface	12 Gb SAS	12 Gb SAS	12 Gb SAS

Supported Media

System Category	Type	Usage/ Purpose	Nominal Capacity	Formatted Capacity*	Interface	DPE 25 Drive	25 X 2.5" Drive DAE	80 X 2.5" Drive DAE	15 X 3.5" Drive DAE
All-Flash	SSD (SAS)	All-Flash	800 GB	733.5 GB	12 Gb SAS	✓	✓	✓	
All-Flash	SSD (SAS)	All-Flash	1.92 TB	1751.9 GB	12 Gb SAS	✓	✓	✓	

All-Flash	SSD (SAS)	All-Flash	3.84 TB	3503.9 GB	12 Gb SAS	✔	✔	✔	
All-Flash	SSD (SAS)	All-Flash	7.68 TB	7006.9 GB	12 Gb SAS	✔	✔	✔	
All-Flash	SSD (SAS)	All-Flash	15.36 TB	14014.9 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	FAST Cache & Mixed Pool	400 GB	366.7 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	Mixed Pool	800 GB	733.5 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	Mixed Pool	1.6 TB	1467.45 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	Mixed Pool	3.2 TB	2919.9 GB	12 Gb SAS	✔	✔	✔	
Hybrid	SSD (SAS)	All-Flash	7.6 TB	7006.9 GB	12 Gb SAS	✔	✔	✔	
Hybrid	10K HDD (SAS)	Mixed Pool	600 GB	536.7 GB	12 Gb SAS	✔	✔	✔	
Hybrid	10K HDD (SAS)	Mixed Pool	1.2 TB	1100.5 GB	12 Gb SAS	✔	✔	✔	
Hybrid	10K HDD (SAS)	Mixed Pool	1.8 TB	1650.8 GB	12 Gb SAS	✔	✔	✔	
Hybrid	7.2K HDD (NL-SAS)	Mixed Pool	4.0 TB	3668.6 GB	12 Gb SAS				✔
Hybrid	7.2K HDD (NL-SAS)	Mixed Pool	6.0 TB	5505.0 GB	12 Gb SAS				✔
Hybrid	7.2K HDD (NL-SAS)	Mixed Pool	12.0 TB	10948.7 GB	12 Gb SAS				✔

*GB = Base2 GiB (GiB = 1024x1024x1024)
All drives are 520 bytes/sector.
All drives are non-SED. Data at Rest Encryption is done via the storage controller

Dell EMC Unity OE Protocols and Software Facilities

Support is provided for a wide variety of protocols and advanced features available via various software suites, plug-ins, drivers and packs.

Protocols and Facilities Supported		
Access-based Enumeration (ABE) for SMB protocol	Address Resolution Protocol (ARP)	Block Protocols: iSCSI, Fibre Channel (FCP SCSI-3)
Container Storage Interface (CSI) Driver	Controller based Data at Rest Encryption (D@RE), with self-managed keys	DFS Distributed File System (Microsoft) as Leaf node or Standalone Root Server
Direct Host Attach for Fibre Channel and iSCSI	Dynamic Access Control (DAC) with claims support	Fail-Safe Networking (FSN)
Internet Control Message Protocol (ICMP)	Kerberos Authentication	Key Management Interoperability Protocol (KMIP) compliant external key manager for D@RE
LDAP (Lightweight Directory Access Protocol)	LDAP SSL	Link Aggregation for File (IEEE 802.3ad)
Lock Manager (NLM) v1, v2, v3, and v4	Management & Data Ports IPv4 and/or IPv6	NAS Servers Multi-protocol for UNIX and SMB clients (Microsoft, Apple, Samba)
Network Data Management Protocol (NDMP) v1-v4, 2-way & 3-way	Network Information Service (NIS) Client	Network Status Monitor (NSM) v1 Network Status Monitor (NSM) v1
Network Time Protocol (NTP) client	NFS v3/v4 Secure Support	NT LAN Manager (NTLM)
Portmapper v2	REST API: Open API that uses HTTP requests to provide management	Restriction of Hazardous Substances (RoHS) compliance
RSVD v1 for Microsoft Hyper-V	Simple Home Directory access for SMB protocol	SMI-S v1.6.1 compatible Dell EMC Unity Block & File client
Simple Mail Transfer Protocol (SMTP)	Simple Network Management Protocol v2c & v3 (SNMP)	Virtual LAN (IEEE 802.1q)
VMware® Virtual Volumes (VVols) 2.0	VMware® vRealize™ Orchestrator (vRO) Plug-in	

Security & Compliance (applies to all Dell EMC Unity XT systems, except Dell EMC UnityVSA)

Department of Defense Information Network Approved Products List (DODIN APL) – Dell EMC Unity O.E. v5.1 Listed
Common Criteria
Controller based Data at Rest Encryption (D@RE) with self-managed keys
KMIP compliant external key manager for D@RE
FIPS 140-2 Level 1 validation
IPv6 and dual stack (IPv4) modes of operation
Native SHA2 certificate
Security Technical Implementation Guide /Security Requirements Guide (STIG/SRG)
TLS 1.2 support and TLS 1.0/1.1 disablement
File-Level Retention: Enterprise FLR-E and Compliance FLR-C with requirements for SEC rule 17a-4(f)

Software

All Inclusive Base Software	**Management Software:** • Unisphere: Element Manager • Unisphere Central: Consolidated dashboard and alerting • CloudIQ: Cloud-based storage analytics • Thin Provisioning • Dynamic Pools - All-Flash Arrays (AFA) only • Data Reduction: Zero Detect/Deduplication/Compression (AFA and All-Flash Pools in Hybrid Arrays, Block & File) • Host Groups • Proactive Assist: Configure remote support, online chat, open a service request, etc. • Quality of Service (Block and VVols) • Dell EMC Storage Analytics Adapter for VMware® vRealize™ • File & Block Tiering / Archiving to Public/Private Cloud (Cloud Tiering Appliance) • File-Level Retention (FLR-E & FLR-C) **Unified Protocols:** • File • Block • VVols **Local Protection:** • Controller Based Encryption (optional), with self-managed or external key management • Local Point-In-Time Copies (Snapshots and Thin Clones) • AppSync Basic • Dell EMC Common Event Enabler; AntiVirus Agent, Event Publishing Agent **Remote Protection:** • Native Asynchronous Block & File Replication, including bandwidth throttling • Native Synchronous Block & File Replication, including bandwidth throttling • MetroSync Manager (optional software to automate synchronous file replication sessions) • Snapshot Shipping • Dell EMC RecoverPoint Basic **Migration:** • Native Block & File migration from Dell EMC VNX • SAN Copy Pull: Integrated Block migration from 3rd party arrays **Performance Optimization for Hybrid Arrays:** • FAST Cache • FAST VP
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
Optional Solutions	• AppSync Advanced • Connectrix SAN • Data Protection Suite: Backup, Archive and Collaboration Software • Dell EMC RecoverPoint Advanced • Dell EMC RP4VM • PowerPath Migration Enabler • PowerPath Multipathing • Unity XT metro node • VPLEX
Note: For more details on software licensing, please contact your sales representative	

Virtualization Solutions

Dell EMC Unity offers support for a wide variety of protocol and advanced features available via various software suites and packs including but not limited to:

- OpenStack Cinder Driver: For provisioning and managing block volumes within an OpenStack environment
- OpenStack Manila Driver: For managing shared file systems within an OpenStack environment
- Dell EMC Virtual Storage Integrator (VSI) for VMware vSphere™: For provisioning, management, and cloning
- VMware Site Recovery Manager (SRM) Integration: Managing failover and failback making disaster recovery rapid and reliable
- Virtualization API Integration: VMware: VAAI and VASA. Hyper-V: Offloaded Data Transfer (ODX) and Offload Copy for File
- Ansible Module for Unity

Electrical Specifications

All power figures shown represent a worst case product configuration with max normal values operating in an ambient temperature environment of 20°C to 25°C.

The chassis power numbers provided may increase when operating in a higher ambient temperature environment.

Disk Processor Enclosure (DPE)				
	380F/380 DPE 25 2.5" SFF drives and four IO modules	480F/480 DPE 25 2.5" SFF drives and four IO modules	680F/680 DPE 25 2.5" SFF drives and four IO modules	880F/880 DPE 25 2.5" SFF drives and four IO modules
POWER				
AC Line Voltage	100 to 240 VAC ± 10%, single phase, 47 to 63 Hz			
AC Line Current (operating maximum)	10.07 A max at 100 VAC; 5.04 A max at 200VAC	10.6 A max at 100 VAC; 5.3 A max at 200VAC	11.72 A max at 100 VAC; 5.86 A max at 200VAC	14.41 A max at 100 VAC; 7.2 A max at 200VAC
Power Consumption (operating maximum)	1007 VA (970.5 W) max at 100 VAC; 1007 VA (970.5 W) max at 200 VAC	1060 VA (1050 W) max at 100 VAC; 1060 VA (1050 W) max at 200 VAC	1172 VA (1161 W) max at 100 VAC; 1172 VA (1161 W) max at 200 VAC	1440.77 VA (1411.96 W) max at 100 VAC; 1440.77 VA (1411.96 W) max at 200 VAC
Power Factor	0.95 minimum at full load, @ 100/ 200 VAC			
Heat Dissipation (operating maximum)	3.49×10^6 J/hr, (3,311 Btu/hr) max at 100 VAC; 3.49×10^6 J/hr, (3,311 Btu/hr) max (100V)	3.78×10^6 J/hr, (3,581 Btu/hr) max at 100 VAC; 3.78×10^6 J/hr, (3,581 Btu/hr) max 200VAC	4.18×10^6 J/hr, (3,960 Btu/hr) max at 100 VAC; 4.18×10^6 J/hr, (3,960 Btu/hr) max 200VAC	5.08×10^6 J/hr, (4,818 Btu/hr) max at 100 VAC; 5.08×10^6 J/hr, (4,818 Btu/hr) max 200VAC
In-rush Current	45 Apk "cold" per line cord, at any line voltage			
Startup Surge Current	120 Apk "hot" per line cord, at any line voltage			
AC Protection	15 A fuse on each power supply, single line	20 A fuse on each power supply, single line		
AC Inlet Type (High Line)	IEC320-C14 appliance coupler, per power zone			
AC Inlet Type (Low Line)	IEC320-C20 appliance coupler, per power zone			IEC320-C14 appliance coupler, per power zone*
Ride-through Time	10 ms min			
Current Sharing	± 5 percent of full load, between power supplies			
* Requires customer supplied step-up transformer				

DIMENSIONS

Weight kgs/lbs	empty 24.60/54.11	empty 25.90/57.10	empty 25.90/57.10	empty 25.90/57.10
Vertical size	2 NEMA units	2 NEMA units	2 NEMA units	2 NEMA units
Height cm/inches	8.88/3.5	8.72/3.43	8.72/3.43	8.72/3.43
Width cm/inches	44.76/17.62	44.72/17.61	44.72/17.61	44.72/17.61
Depth cm/inches	61.39/24.17	79.55/31.32	79.55/31.32	79.55/31.32

Note: Power consumption values for DPEs and DAEs are based on fully populated enclosures (power supplies, drives and I/O modules).

Disk Array Enclosure (DAE)

	25 X 2.5" Drive DAE	80 X 2.5" Drive DAE	15 X 3.5" Drive DAE
POWER			
AC Line Voltage	100 to 240 VAC ± 10%, single phase, 47 to 63 Hz		
AC Line Current (operating maximum)	4.50 A max at 100 VAC, 2.40 A max at 200 VAC	13.18 A max at 100 VAC, 6.59 A max at 200 VAC	2.90 A max at 100 VAC, 1.60 A max at 200 VAC
Power Consumption (operating maximum)	453.0 VA/ 432.0 W max at 100 VAC 485.0 VA/ 427.0 W max at 200VAC	1318.0 VA/ 1233.0 W max at 100 VAC 1318.0 VA/ 1233.0 W max at 200VAC	287.0 VA/ 281.0 W max at 100 VAC 313.0 VA/ 277.0 W max at 200VAC
Power Factor	0.95 minimum at full load, @ 100V/200V		0.90 minimum at full load, @ 100V/200V
Heat Dissipation (operating maximum)	1.56×10^6 J/hr, (1,474 Btu/hr) max at 100 VAC 1.54×10^6 J/hr, (1,457 Btu/hr) max at 200 VAC	4.43×10^6 J/hr, (4,207 Btu/hr) max at 100 VAC 4.43×10^6 J/hr, (4,207 Btu/hr) max at 200 VAC	1.01×10^6 J/hr, (959 Btu/hr) max at 100 VAC 1.00×10^6 J/hr, (945 Btu/hr) max at 200 VAC
In-rush Current	30 Apk "cold" per line cord, at any line voltage	45 Apk "cold" per line cord, at any line voltage	30 A max "cold" for ½ line cycle, per line cord at 240 VAC
Startup Surge Current	40 Apk "cold" per line cord, at any line voltage	120 Apk "hot" per line cord, at any line voltage	25 Amps peak max per line cord, at any line voltage
AC Protection	15 A fuse on each power supply, single line		10 A fuse on each power supply, single line
AC Inlet Type	IEC320-C14 appliance coupler, per power zone		
Ride-through Time	12 ms minimum	10 ms minimum	30 ms minimum
Current Sharing	± 5 percent of full load, between power supplies		Droop Load Sharing
WEIGHT AND DIMENSIONS			
Weight kg/lbs	Empty: 10.0/22.1 Full: 20.23/44.61	Empty: 11.33/25 Full: 58.9/130	Empty: 14.5/32 Full: 30.8/68
Vertical size	2 NEMA units	3 NEMA units	3 NEMA units
Height cm/inches	8.46/3.40	13.21/5.20	13.33/5.25
Width cm/inches	44.45/17.5	44.70/17.6	44.45/17.5
Depth cm/inches	33.02/13	76.20/30	35.56/14

Note: Power consumption values for DPEs and DAEs are based on fully populated enclosures (power supplies, drives and I/O modules).

Cabinets

	Standard 40U Cabinet
AC Line Voltage	200 to 240 VAC ± 10%, single-phase, 47 to 63 Hz
Power Configuration	One, two, three or four power domains, each redundant
Power Inlet Count	Two, four, six, or eight (two per domain)
Plug Types	NEMA L6-30P or IEC309-332 P6 or IP57 (Australia)
Input Power Capacity	1 Domain: 4,800 VA @ 200 VAC, 5,760 VA @ 240 VAC 2 Domain: 9,600 VA @ 200 VAC, 11,520 VA @ 240 VAC 3 Domain: 14,400 VA @ 200 VAC, 17,280 VA @ 240 VAC 4 Domain: 19,200 VA @ 200 VAC, 20,040 VA @ 240 VAC
AC Protection	30 A site circuit breakers on each power branch
40U Cabinet Dimensions	Height - 75 in (190.8 cm); Width - 24.0 in (61.1 cm); Depth - 39.0 in (99.2 cm); Weight Empty – 380 lb (173 kg)

Operating environment

The Dell EMC Unity XT 480F/480 – 880F/880 models meet ASHRAE Equipment Class A3 and the 380F/380 models meet ASHRAE Equipment Class A4.

	Description	Specification
Recommended Range Operation	The limits under which equipment will operate the most reliably while still achieving reasonably energy-efficient data center operation.	18°C to 27°C (64.4°F to 80.6°F) at 5.5°C (59°F) dew.
Continuous Allowable Range Operation	Data center economization techniques (e.g. free cooling) may be employed to improve overall data center efficiency. These techniques may cause equipment inlet conditions to fall outside the recommended range but still within the continuously allowable range. Equipment may be operated without any hourly limitations in this range.	5°C to 35°C (50°F to 95°F) at 20% to 80% relative humidity with 21°C (69.8°F) maximum dew point (maximum wet bulb temperature). De-rate maximum allowable dry bulb temperature at 1°C per 300m above 950m (1°F per 547 ft above 3117 ft).
Improbable Operation (Excursion Limited)	During certain times of the day or year, equipment inlet conditions may fall outside the continuously allowable range but still within the expanded improbable range. Equipment operation is limited to ≤ 10% of annual operating hours in this range.	35°C to 40°C (with no direct sunlight on the equipment) at -12°C dew point and 8% to 85% relative humidity with 24°C dew point (maximum wet bulb temperature). Outside the continuously allowable range (10°C to 35°C), the system can operate down to 5°C or up to 40°C for a maximum of 10% of its annual operating hours. For temperatures between 35°C and 40°C (95°F to 104°F), de-rate maximum allowable dry bulb temperature by 1°C per 175m above 950m (1°F per 319 ft above 3117 ft).
Exceptional Operation (Excursion Limited) ASHRAE 4 only	During certain times of the day or year, equipment inlet conditions may fall outside the continuously allowable range but still within the expanded exceptional range. Equipment operation is limited to ≤ 1% of annual operating hours in this range.	40°C to 45°C (with no direct sunlight on the equipment) at -12°C dew point and 8% to 90% relative humidity with 24°C dew point (maximum wet bulb temperature). Outside the continuously allowable range (10°C to 35°C), the system can operate down to 5°C or up to 45°C for a maximum of 1% of its annual operating hours. For temperatures between 35°C and 45°C (95°F to 104°F), de-rate maximum allowable dry bulb temperature by 1°C per 125m above 950m (1°F per 228 ft above 3117 ft).
Temperature Gradient		20°C / hour (36°F / hour)
Altitude	Max Operating	3050m (10,000ft)

Statement of Compliance

Dell EMC Information Technology Equipment is compliant with all currently applicable regulatory requirements for Electromagnetic Compatibility, Product Safety, and Environmental Regulations where placed on market.

Detailed regulatory information and verification of compliance is available at the Dell Regulatory Compliance website. http://dell.com/regulatory_compliance

DELLTechnologies

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