

12/16/21 11:44:11
WV Purchasing Division

State of West Virginia Lottery
Scalable Infrastructure Storage Solution
Advizex Response to CRFP 2200000001

TECH PROPOSAL



Bid Due Date: 12/17/2021

Bid Due Time: 1:30pm

Version: 1.14

Presented to:

Toby L. Welch
Buyer
Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305
304-558-8802 [office]
Toby.l.welch@wv.gov

Submitted by:

Mika Munoz
Account Executive
Advizex Technologies, LLC
680 Andersen Drive
Foster Plaza 10, 2nd Floor
Pittsburgh, PA 15220
304-615-3301 [mobile]
412-446-8300 [office]
412-937-0537 [fax]
mmunoz@advizex.com

Advizex Technologies, LLC (Advizex) has prepared this document solely for the State of West Virginia Lottery (WV Lottery).

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Advizex

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December 17, 2021

Toby L. Welch
Buyer
Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305

**RE: State of West Virginia Lottery
Scalable Infrastructure Storage Solution
Advizex Response to CRFP 2200000001**

Mr. Welch:

On behalf of Advizex Technologies, LLC (Advizex) I am pleased to submit our response to the State of West Virginia Lottery (WVL) for a new Scalable Infrastructure Storage Solution.

I, Mika Munoz, and your Account Executive and can always be reached at:

Mika Munoz
Account Executive
304-615-3301 [mobile]
mmunoz@advizex.com

680 Andersen Drive
Foster Plaza 10, 2nd Floor
Pittsburgh, PA 15220
412-446-8300 [office]
412-937-0537 [fax]

Advizex is an industry-leading information technology provider that combines the technical expertise of our highly-skilled consultants and leverages solutions from the industry's top technology partners. We have done this for over (46) forty-six years. Our practices include:

- Networking
- Application Modernization
- Microservices / Microsegmentation
- Microsoft Consulting and Platforms
- ServiceNow
- Business Process Engineering
- Virtualization
- Platforms and Systems
- Storage
- Hyper-converged Systems
- Scaled Agile Framework
- Cloud Native Application Development
- Mobile Computing
- Security
- Backup & Recovery
- Business Continuity
- Managed Services
- Cloud Computing
- Database Technologies
- Oracle Applications and Platforms

Advizex takes customer satisfaction seriously and maintains a 96% client retention rate, industry leader partnerships, and frequent recognition by the industry.

We currently employ over 175 technical consultants holding over 800 certifications.

Advizex has been recognized for its capabilities and excellence by our partners, for example:

- **HPE / Aruba** - Platinum Partner (44 Consecutive Years)
- **ServiceNow**
 - Expertise with ITSM, ITOM, GRC, SecOps and ITBM
- **CRN**
 - 2021 Elite 250
 - 2020 MSP500 and Tech Elite
 - 2016 through 2019 Top 500 Solution Providers (SP500)
- **VMware**
 - 2019 North America Services Delivery Partner of the Year
 - 2018 North America Services Delivery Partner of the Year
 - 2017 Americas Empower the Digital Workspace Partner of the Year
 - 2016 Global Professional Services Partner of the Year Award
 - 2016 Americas Professional Services Partner Innovation Award
 - 2014 Global Software Defined Data Center Partner of the Year
- **Oracle** -- Platinum Partner - 9 TITAN Awards
- **Microsoft** – Gold Partner for 12+ years
- **Dell / EMC**
 - 2018 and 2019 Dell EMC Services Delivery Partner of the Year – North America
 - Titanium Partner 2016 to 2021
 - Partner Services Quality Award (9th Consecutive Year)
 - 2014 EMC Americas Services Partner of the Year
- **Cisco** – Premier Partner
- **Palo Alto** -- Platinum Partner
- **Varonis** -- Gold Partner
- **Citrix, Pivotal, Cloudera, Trend Micro, Vormetric, and Red Hat**

As you see above, we have been awarded multiple times for the exact same products we have proposed in our solution to you; including our technical resources.

I need to recognize Jason Mayhue, a Senior Architect from Advizex, as the designer of the proposed solution. He is available, at any time, to discuss any questions related to this proposal and will play a pivotal role in the shortlisted presentations with your procurement and technical teams. His contact information is 540-761-0069 or jmayhue@advizex.com.



We have worked closely with every OEM whose products are included with this proposal and are 100% sure that this meets your expressed and future growth needs.

I Thank you for this opportunity and look forward to future reviews of this proposal with your technical teams.

Sincerely,

A handwritten signature in blue ink, reading "Mika Munoz", is written over the printed name.

Mika Munoz
Account Executive
Advizex Technologies, LLC

1. LEGAL DOCUMENTS

1.1 COVER PAGES



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

State of West Virginia
Centralized Request for Proposals
Info Technology

Proc Folder: 960003			Reason for Modification:
Doc Description: SCALABLE INFRASTRUCTURE STORAGE SOLUTION			
Proc Type: Central Master Agreement			
Date Issued	Solicitation Closes	Solicitation No	Version
2021-11-09	2021-12-02 13:30	CRFP 0705 LOT2200000001	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000181088
Vendor Name : Advizex Technologies, LLC
Address : 6480
Street : Rockside Woods Blvd. South - Suite 190
City : Independence
State : OH **Country :** USA **Zip :** 44131
Principal Contact : Mika Munoz
Vendor Contact Phone: 304-615-3301 **Extension:**

FOR INFORMATION CONTACT THE BUYER

Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

Vendor
Signature X

FEIN# 37-1504931

DATE 12/11/2021

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

ADDITIONAL INFORMATION

The West Virginia Department of Administration, Purchasing Division (hereinafter referred to as the "Purchasing Division") is issuing this solicitation as a request for proposal ("RFP"), as authorized by W. Va. Code 5A-3-10b, for the West Virginia Lottery (hereinafter referred to as the "Agency") to provide a contract for the purchase of a scalable infrastructure storage solution, services and support required for the migration of existing Lottery Data, software and hardware maintenance, as well as installation and training per the attached documentation.

**** Online responses has been prohibited for this solicitation, if you have questions contact the Buyer - Toby Welch @ toby.l.welch@wv.gov

See attached instructions for requirements for responding.

INVOICE TO				SHIP TO			
LOTTERY PO BOX 2067				LOTTERY 900 PENNSYLVANIA AVE			
CHARLESTON	WV	25327-2067		CHARLESTON	WV	25302	
US				US			

Line	Comm Ln Desc	Qty	Unit of Measure	Unit Price	Total Price
1	Computer servers				

Comm Code	Manufacturer	Specification	Model #
43211501			

Extended Description:

Vendors MUST fill out Cost Sheet included as an attachment. Enter the Grand total amount from cost sheet here as a Contract Amount Lump sum.

****ONLINE SUBMISSIONS OF REQUESTS FOR PROPOSAL ARE PROHIBITED****

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Questions are due by 4:00 p.m.	2021-11-18

	Document Phase	Document Description	Page
LOT2200000001	Draft	SCALABLE INFRASTRUCTURE STORAGE SOLUTION	3

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



1.2 DESIGNATED CONTACT AND CERTIFICATION

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 / Acct. Exe.
(Name, Title)
Mika Munoz, Account Executive
(Printed Name and Title)
6480 Rockside Woods Blvd. South, Suite 190, Independence, OH, 44131
(Address)
304-615-3301 / 216-901-1447
(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)
Scott Hess
(Authorized Signature) (Representative Name, Title)

Scott Hess, Proposal Desk Manager
(Printed Name and Title of Authorized Representative)

12/11/2021
(Date)

440-622-1089 / 216-901-1818
(Phone Number) (Fax Number)



1.3 ADDENDUM ACKNOWLEDGEMENT

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFP LOT22*1

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. 2
- ☒ Addendum No. 3
- ☒ Addendum No. 4
- ☐ Addendum No. 5

- ☐ Addendum No. 6
- ☐ Addendum No. 7
- ☐ Addendum No. 8
- ☐ Addendum No. 9
- ☐ 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 Technologies, LLC

Company

Scott Hess

Authorized Signature

12/11/2021

Date

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



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

State of West Virginia
Centralized Request for Proposals
Info Technology

Proc Folder: 960003

Doc Description: Addendum No. 1 - SCALABLE INFRASTRUCTURE STORAGE SOLUTION

Reason for Modification:

Addendum No. 1 is issued for the following reasons:

1) To extend the bid technical opening date to See Page 2 for complete info

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2021-11-23	2021-12-09 13:30	CRFP 0705 LOT2200000001	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000181088

Vendor Name : Advizex Technologies, LLC

Address : 6480

Street : Rockside Woods Blvd. South - Suite 190

City : Independence

State : OH

Country : USA

Zip : 44131

Principal Contact : Mika Munoz

Vendor Contact Phone: 304-615-3301

Extension:

FOR INFORMATION CONTACT THE BUYER

Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

Vendor
Signature X

FEIN# 37-1504931

DATE 12/11/2021

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

Reason for Modification:

Addendum No. 1 is issued for the following reasons:

1) To extend the bid technical opening date to Thursday December 9, 2021 @ 1:30 p.m.

--no other changes--

ADDITIONAL INFORMATION

Addendum No. 1 is issued for the following reasons:

1) To extend the bid technical opening date to Thursday December 9, 2021 @ 1:30 p.m.

--no other changes--

**** Online responses has been prohibited for this solicitation, if you have questions contact the Buyer - Toby Welch @ toby.l.welch@wv.gov

See attached instructions for requirements for responding.

INVOICE TO			SHIP TO		
LOTTERY PO BOX 2067			LOTTERY 900 PENNSYLVANIA AVE		
CHARLESTON	WV	25327-2067	CHARLESTON	WV	25302
US			US		

Line	Comm Ln Desc	Qty	Unit of Measure	Unit Price	Total Price
1	Computer servers				

Comm Code	Manufacturer	Specification	Model #
43211501			

Extended Description:

Vendors MUST fill out Cost Sheet included as an attachment. Enter the Grand total amount from cost sheet here as a Contract Amount Lump sum.

****ONLINE SUBMISSIONS OF REQUESTS FOR PROPOSAL ARE PROHIBITED****

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Questions are due by 4:00 p.m.	2021-11-18



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

State of West Virginia
Centralized Request for Proposals
Info Technology

Proc Folder: 960003

Doc Description: Addendum No. 2 - SCALABLE INFRASTRUCTURE STORAGE SOLUTION

Reason for Modification:

Addendum No 2 is issued to
publish a copy of vendor's
questions with responses.
no other changes

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2021-11-24	2021-12-09 13:30	CRFP 0705 LOT2200000001	3

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000181088

Vendor Name : Advizex Technologies, LLC

Address : 6480

Street : Rockside Woods Blvd. South - Suite 190

City : Independence

State : OH

Country : USA

Zip : 44131

Principal Contact : Mika Munoz

Vendor Contact Phone: 304-615-3301

Extension:

FOR INFORMATION CONTACT THE BUYER

Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

Vendor
Signature X

FEIN# 37-1504931

DATE 12/11/2021

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

ADDITIONAL INFORMATION

Addendum No 2 is issued for the following reasons:

1) To publish a copy of vendor's questions with the responses.

--no other changes--

*Online responses has been prohibited for this solicitation, if you have questions contact the Buyer - Toby Welch @ toby.l.welch@wv.gov

See attached instructions for requirements for responding.

INVOICE TO			SHIP TO		
LOTTERY PO BOX 2067			LOTTERY 900 PENNSYLVANIA AVE		
CHARLESTON	WV	25327-2067	CHARLESTON	WV	25302
US			US		

Line	Comm Ln Desc	Qty	Unit of Measure	Unit Price	Total Price
1	Computer servers				
Comm Code	Manufacturer	Specification	Model #		
43211501					

Extended Description:

Vendors MUST fill out Cost Sheet included as an attachment. Enter the Grand total amount from cost sheet here as a Contract Amount Lump sum.

****ONLINE SUBMISSIONS OF REQUESTS FOR PROPOSAL ARE PROHIBITED****

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Questions are due by 4:00 p.m.	2021-11-18



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

State of West Virginia
Centralized Request for Proposals
Info Technology

Proc Folder: 960003

Doc Description: Addendum No. 3 - SCALABLE INFRASTRUCTURE STORAGE SOLUTION

Reason for Modification:

Addendum No. 3 is issued to
modify the bid opening date as
per attached.

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2021-12-03	2021-12-17 13:30	CRFP 0705 LOT2200000001	4

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000181088

Vendor Name : Advizex Technologies, LLC

Address : 6480

Street : Rockside Woods Blvd. South - Suite 190

City : Independence

State : OH

Country : USA

Zip : 44131

Principal Contact : Mika Munoz

Vendor Contact Phone: 304-615-3301

Extension:

FOR INFORMATION CONTACT THE BUYER

Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

Vendor
Signature X

FEIN# 37-1504931

DATE 12/11/2021

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

ADDITIONAL INFORMATION

Addendum No. 3 is issued for the following reasons:

1) To modify/extend the bid opening date one (1) week to allow more time for vendors to prepare their responses due to the Thanksgiving Holiday.

--no other changes--

*Online responses has been prohibited for this solicitation, if you have questions contact the Buyer - Toby Welch @ toby.l.welch@wv.gov

See attached instructions for requirements for responding.

INVOICE TO			SHIP TO		
LOTTERY PO BOX 2067			LOTTERY 900 PENNSYLVANIA AVE		
CHARLESTON	WV	25327-2067	CHARLESTON	WV	25302
US			US		

Line	Comm Ln Desc	Qty	Unit of Measure	Unit Price	Total Price
1	Computer servers				

Comm Code	Manufacturer	Specification	Model #
43211501			

Extended Description:

Vendors MUST fill out Cost Sheet included as an attachment. Enter the Grand total amount from cost sheet here as a Contract Amount Lump sum.

****ONLINE SUBMISSIONS OF REQUESTS FOR PROPOSAL ARE PROHIBITED****

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Questions are due by 4:00 p.m.	2021-11-18



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

State of West Virginia
Centralized Request for Proposals
Info Technology

Proc Folder: 960003

Doc Description: Addendum No. 4 - SCALABLE INFRASTRUCTURE STORAGE SOLUTION

Reason for Modification:

Addendum No. 4 is issued to
upload corrected cost sheet

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2021-12-09	2021-12-17 13:30	CRFP 0705 LOT2200000001	5

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000181088

Vendor Name : Advizex Technologies, LLC

Address : 6480

Street : Rockside Woods Blvd. South - Suite 190

City : Independence

State : OH

Country : USA

Zip : 44131

Principal Contact : Mika Munoz

Vendor Contact Phone: 304-615-3301

Extension:

FOR INFORMATION CONTACT THE BUYER

Toby L Welch
(304) 558-8802
toby.l.welch@wv.gov

Vendor
Signature X

FEIN# 37-1504931

DATE 12/11/2021

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

ADDITIONAL INFORMATION

Addendum No. 4 is issued for the following reasons:

1) To upload a corrected version of the Cost sheet in Excel format. the previous version had an error in the formulas and it was causing the totals to calculate incorrectly. *AS ATTACHED*

--no other changes--

*Online responses has been prohibited for this solicitation, if you have questions contact the Buyer - Toby Welch @ toby.l.welch@wv.gov

See attached instructions for requirements for responding.

INVOICE TO			SHIP TO		
LOTTERY PO BOX 2067			LOTTERY 900 PENNSYLVANIA AVE		
CHARLESTON	WV	25327-2067	CHARLESTON	WV	25302
US			US		

Line	Comm Ln Desc	Qty	Unit of Measure	Unit Price	Total Price
1	Computer servers				

Comm Code	Manufacturer	Specification	Model #
43211501			

Extended Description:

Vendors MUST fill out Cost Sheet included as an attachment. Enter the Grand total amount from cost sheet here as a Contract Amount Lump sum.

****ONLINE SUBMISSIONS OF REQUESTS FOR PROPOSAL ARE PROHIBITED****

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Questions are due by 4:00 p.m.	2021-11-18



1.4 BILL OF MATERIALS

Qty	Part Number	Description	Appendix
		HCI Hardware/Software	
12	210-APXR	VXRAIL E560F,10X2.5",FLASH	
12	325-BCVR	E560F BRANDING	
12	329-BDWH	PSNT INFO	
12	379-BENB	VSAN NODE	
12	384-BCWY	4.7.530 FIRMWARE-LOCK,P570,P570F,V570,V570F,S570, E560,E560F,E560N	
12	634-BYJD	VXRAIL SW,4.7.530	
12	379-BDYQ	NO TRANSFORMATIONAL LICENSE AGREEMENT	
12	321-BCQL	2.5 CHASSIS WITH UP TO 10 HARD DRIVES AND 3PCIE SLOTS	
12	325-BCVY	VXRAIL E560 BEZEL	
12	338-BRVO	INTEL XEON GOLD 6248 2.5G, 20C/40T, 10.4GT/S, 27.5M CACHE, TURBO, HT (150W) DDR4-2933	
12	374-BBBX	NO ADDITIONAL PROCESSOR	
12	370-AEVR	3200MT/S RDIMMS	
72	370-AEVQ	16GB RDIMM, 3200MT/S, DUAL RANK	
12	400-AZQO	800GB SSD SAS ISE MIX USE 12GBPS 512E 2.5IN HOT-PLUG AG DRIVE, 3 DWPD,	
48	400-AXPE	3.84TB SSD SAS ISE READ INTENSIVE 12GBPS 512 2.5IN HOT-PLUG AG DRIVE, 1 DWPD,	
12	540-BBUM	BROADCOM 57414 DUAL PORT 10/25GBE SFP28, RNDG	
12	461-AADZ	NO TRUSTED PLATFORM MODULE	
12	770-BBBM	READYRAILS STATIC RAILS FOR 2/4-POST RACKS	
12	450-ADWM	DUAL, HOT-PLUG, REDUNDANT POWER SUPPLY (1+1), 1100W	
24	450-AALV	POWER CORD - C13, 3M, 125V, 15A (NORTH AMERICA, GUAM, NORTH MARIANAS, PHILIPPINES, SAMOA, VIETNAM)	
12	470-ACPE	VXRAIL SMALL FORM FACTOR PLUGGABLE CABLE KIT	
12	634-BSLD	VXRAIL VMWARE, VSAN ENTERPRISE, 5 YEARS	
12	634-BSKH	VXRAIL HCI SYSTEM SOFTWARE, ALL-FLASH, E	
48	634-BRIL	VXRAIL HCI SYSTEM SOFTWARE, CAPACITY DRIVE 3.84TB SAS, SSD	
12	389-DSVE	POWEREDGE R640 CE, CCC, BIS MARKING	
12	634-BWRZ	HClA RECOVERPOINT FOR VMWARE FOR 1 NODE VT	
12	340-BYUL	E560/E560F SHIPPING	
12	340-COPR	POWEREDGE R640 X4 AND X10 DRIVE SHIPPING MATERIAL	
12	330-BBKB	RISER CONFIG 4, 2X16 LP	
12	329-BEIJ	POWEREDGE R640 MLK MOTHERBOARD	
12	370-ADNM	BLANK FOR 1CPU CONFIGURATION	
12	412-AAIQ	STANDARD 1U HEATSINK	
12	370-AAIP	PERFORMANCE OPTIMIZED	
12	780-BCIZ	NO RAID FOR E560	
12	405-AAJU	HBA330 12GBPS SAS HBA CONTROLLER (NON-RAID), MINICARD	
12	403-BCHI	BOSS CONTROLLER CARD + WITH 2 M.2 STICKS 240G (RAID 1),LP	
12	385-BBKT	IDRAC9,ENTERPRISE	
12	379-BCQY	IDRAC GROUP MANAGER, DISABLED	
12	379-BCRF	IDRAC,LEGACY PASSWORD	
12	379-BCRB	DHCP WITH ZERO TOUCH CONFIGURATION	
12	385-BBLE	IDSDM AND COMBO CARD READER	
12	385-BBCF	REDUNDANT SD CARDS ENABLED	
12	385-BBKI	64GB MICROSDHC/SDXC CARD	
12	385-BBKI	64GB MICROSDHC/SDXC CARD	
12	384-BBPR	5 STANDARD FANS FOR R640	
12	350-BBKB	NO QUICK SYNC	
12	800-BBDM	UEFI BIOS BOOT MODE WITH GPT PARTITION	
12	387-BBEY	NO ENERGY STAR	
12	429-AAIQ	NO INTERNAL OPTICAL DRIVE	
12	631-AACK	NO SYSTEMS DOCUMENTATION, NO OPENMANAGE DVD KIT	
12	350-BBNP	VXRAIL E560F LUGGAGE TAG	
12	332-1286	US ORDER	
		UDS Hardware/Software	
1	AB109692	SUPERNA SEL ENTERPRISE SUITE 1 WRITE CLSTR 5YR	
1	210-AXWW	POWERSCALE ACCESSORIES BASE	
8	470-ABPS	DELL NETWORKING CABLE, SFP+ TO SFP+, 10GBE, PASSIVE COPPER TWINAX DIRECT ATTACH, 2 METER,CUST KIT	
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	210-AVMU	DATAIQ PERPETUAL BASE	
1	528-CIHW	DATAIQ DELL BASE LIC=IF	

1	835-9439	PROSUPPORT PLUS MISSION CRITICAL-DATAIQ INSTANCE SOFTWARE SUPPORT CONTRACT 5 YEARS	Appendix D
1	835-9419	PROSUPPORT PLUS MISSION CRITICAL-DATAIQ INSTANCE SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	626-BBBG	STORAGE SOFTWARE INFO	
1	210-AYWM	POWERSCALE SERVICES	
4	210-AVLI	POWERSCALE F200	
4	800-BBQV	THANK YOU FOR BUYING DELL EMC	
4	406-BBQL	FE 2X25GBE W/O OPTICS	
4	540-BCTS	BE 2X25GBE W/O OPTICS	
4	345-BCWK	SED/FIPS 8TB (1.92TB X 4) SSD	
4	370-AFWX	96GB 3200 DIMM MEMORY	
4	450-AJNP	C13/C14 US (2M) X2	
4	149-BBBY	ONEFS BASE LICENSE 8TB TIER 6 =ID	
4	149-BBBZ	ONEFS ENC/KEY MGT LICENSE 8TB TIER 6 =ID	
32	149-BBBS	ONEFS CAPACITY LICENSE TIER 6 =CB	
4	151-BBDL	SMARTCONNECT BASE LICENSE TIER 6 =ID	
4	151-BBDN	SYNCIQ BASE LICENSE TIER 6 =ID	
4	151-BBDY	SMARTQUOTAS BASE LICENSE TIER 6 =ID	
4	151-BBDZ	SMARTPOOL BASE LICENSE TIER 6 =ID	
4	151-BBED	SNAPSHOTIQ BASE LICENSE TIER 6 =ID	
4	151-BBEL	ENTERPRISE ADVANCED BUNDLE TIER 6 =ID	
32	151-BBDP	SYNCIQ CAPACITY LICENSE TIER 6 =CB	
32	151-BBDT	SMARTQUOTAS CAPACITY LICENSE TIER 6 =CB	
32	151-BBEB	ENTERPRISE ADV BUNDLE CAP T6 PER TB =CB	
32	151-BBEK	SMARTCONNECT CAPACITY LICENSE TIER 6 =CB	
32	151-BBEO	SNAPSHOTIQ CAPACITY LICENSE TIER 6 =CB	
32	151-BBEU	SMARTPOOL CAPACITY LICENSE TIER 6 =CB	
4	151-BBDS	SMARTLOCK BASE LICENSE TIER 6 =ID	
4	151-BBEH	HDFS FOR ONEFS (\$0.00)	
32	151-BBER	SMARTLOCK CAPACITY LICENSE TIER 6 =CB	
4	623-BBDX	IDRAC RANDOM PASSWORD	
4	340-CQWH	SHIPPING MATERIAL	
4	340-CQWI	POWERSCALE SHIPPING	
4	350-BBZL	BEZEL COMPONENTS	
4	338-BVTN	2.2 GHZ PROCESSOR	
4	370-AFGV	MEMORY COMPONENTS	
4	461-AAIU	TRUSTED PLATFORM MODULE V3	
4	623-BBDY	INFO F200 ISG PRODUCT	
4	770-BDRE	RACK RAILS WITH CMA	
4	450-AKHL	DUAL PSU 750W RDNT	
4	528-CKSU	IDRAC, 14G, ENTERPRISE LICENSE	
4	750-ACMW	F200 NODE HARDWARE	
4	750-ACMX	F200 NODE HARDWARE CONT	
1	210-AXWW	POWERSCALE ACCESSORIES BASE	
8	470-ABPS	DELL NETWORKING CABLE, SFP+ TO SFP+, 10GBE, PASSIVE COPPER TWINAX DIRECT ATTACH, 2 METER,CUST KIT	
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	210-AVMU	DATAIQ PERPETUAL BASE	
1	528-CIHW	DATAIQ DELL BASE LIC=IF	
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	626-BBBG	STORAGE SOFTWARE INFO	
4	210-AVLI	POWERSCALE F200	
4	800-BBQV	THANK YOU FOR BUYING DELL EMC	
4	406-BBQL	FE 2X25GBE W/O OPTICS	
4	540-BCTS	BE 2X25GBE W/O OPTICS	
4	345-BCWK	SED/FIPS 8TB (1.92TB X 4) SSD	
4	370-AFWX	96GB 3200 DIMM MEMORY	
4	450-AJNP	C13/C14 US (2M) X2	
4	149-BBBY	ONEFS BASE LICENSE 8TB TIER 6 =ID	
4	149-BBBZ	ONEFS ENC/KEY MGT LICENSE 8TB TIER 6 =ID	
32	149-BBBS	ONEFS CAPACITY LICENSE TIER 6 =CB	

4	151-BBDL	SMARTCONNECT BASE LICENSE TIER 6 =ID	
4	151-BBDN	SYNClQ BASE LICENSE TIER 6 =ID	
4	151-BBDY	SMARTQUOTAS BASE LICENSE TIER 6 =ID	
4	151-BBDZ	SMARTPOOL BASE LICENSE TIER 6 =ID	
4	151-BBED	SNAPSHOTIQ BASE LICENSE TIER 6 =ID	
4	151-BBEL	ENTERPRISE ADVANCED BUNDLE TIER 6 =ID	
32	151-BBDP	SYNClQ CAPACITY LICENSE TIER 6 =CB	
32	151-BBDT	SMARTQUOTAS CAPACITY LICENSE TIER 6 =CB	
32	151-BBEB	ENTERPRISE ADV BUNDLE CAP T6 PER TB =CB	
32	151-BBEK	SMARTCONNECT CAPACITY LICENSE TIER 6 =CB	
32	151-BBEO	SNAPSHOTIQ CAPACITY LICENSE TIER 6 =CB	
32	151-BBEU	SMARTPOOL CAPACITY LICENSE TIER 6 =CB	
4	151-BBDS	SMARTLOCK BASE LICENSE TIER 6 =ID	
4	151-BBEH	HDFS FOR ONEFS (\$0.00)	
32	151-BBER	SMARTLOCK CAPACITY LICENSE TIER 6 =CB	
4	623-BBDX	IDRAC RANDOM PASSWORD	
4	340-CQWH	SHIPPING MATERIAL	
4	340-CQWI	POWERSCALE SHIPPING	
4	350-BBZL	BEZEL COMPONENTS	
4	338-BVTN	2.2 GHZ PROCESSOR	
4	370-AFGV	MEMORY COMPONENTS	
4	461-AAIU	TRUSTED PLATFORM MODULE V3	
4	623-BBDY	INFO F200 ISG PRODUCT	
4	770-BDRE	RACK RAILS WITH CMA	
4	450-AKHL	DUAL PSU 750W RDNT	
4	528-CKSU	IDRAC, 14G, ENTERPRISE LICENSE	
4	750-ACMW	F200 NODE HARDWARE	
4	750-ACMX	F200 NODE HARDWARE CONT	
4	626-BBBI	STORAGE DELL FULFILLED INFO	
		DPS Hardware/Software	
1	210-ARXY	DATA PROTECTION SUITE FOR VMWARE	
1	528-BFNM	CLOUDBOOST AWS DATA PROTECTION SUITE ENABLER	
1	528-BFNN	DATA PROTECTION CENTRAL FOR DPD	
1	528-BFNO	DPA SINGLE FED REPORTING SERVER	
1	528-BFNQ	DATA PROTECTION SUITE FOR VMWARE AVAMAR H ENABLER	
1	528-BFNR	DATA PROTECTION SUITE FOR VMWARE DPA ENABLER	
1	528-BFNT	DATA PROTECTION SUITE FOR VMWARE SEARCH ENABLER	
1	528-BFOB	NW 9.2+ DATA PROTECTION SUITE CAP ENABLER=CA	
1	528-BFOC	VREALIZE DATA PROTECTION EXTENSION	
1	823-4346	PROSUPPORT PLUS MISSION CRITICAL, SOFTWARE ENTITLEMENT, 5 YEARS	Appendix D
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
6	528-BFNY	DATA PROTECTION SUITE FOR VMWARE SOCKETS, 5YR=IA	
2	528-BFNP	DATA PROTECTION SUITE FOR VMWARE 2TB AVE H ENABLER=CA	
6	528-BFNS	DATA PROTECTION SUITE FOR VMWARE RP4VM ENABLER=IA	
1	626-BBBG	STORAGE SOFTWARE INFO	
1	379-BDTQ	THANK YOU FOR BUYING DELL EMC	
1	210-AWOI	IDPA DP4400 24TB 10G QP NDC X710 SFP+	
1	321-BFRC	IDPA DP4400 24TB 10G QP NDC X710 SFP+ CONFIGURATION TPM	
1	329-BDWH	PSNT INFO	
1	350-BBSU	IDPA DP4400 BRANDING	
2	528-CJZE	IDPA DP4400 ENV CONFIG 12TB	
3	528-CJZD	IDPA DP4400 SW 12TB EXPN	
1	528-CKBD	IDPA BU APP ENABLER ENTRY=IA	
1	528-CKBE	FEDERATED REPORTING SERVER ENTRY=IA	
1	528-CKBF	IDPA TARGET PROTOCOL ENABLER ENTRY=CA	
1	528-CKBG	VREALIZE ENABLER ENTRY=IA	
1	528-CKBH	IDPA BOOSTFS ENABLER ENTRY=IA	
1	528-CKBI	IDPA BU SEARCH ENABLER ENTRY=CA	
1	528-CKBJ	ANALYTICS ENABLER ENTRY=CB	
1	528-CKBM	DATA PROTECTION CENTRAL FOR DPD=CA	
1	800-BBSN	IDPA DP4400 PLATFORM HYPERVISOR	
1	800-BBSL	IDPA DP4400 PLATFORM HPVSR MAINT 5YR	
1	528-BEHL	IDPA DP4400 CLOUD TIER 5TB STARTER PACK	
1	332-1286	US ORDER	

1	528-CJZM	IDPA DP4400 CLOUD DR 5TB STARTER PACK	
1	658-BDZK	IDPA DP4400 SOFTWARE FACTORY INSTALLED	
4	470-AAGP	DELL NETWORKING, CABLE, SFP+ TO SFP+, 10GBE, COPPER TWINAX DIRECT ATTACH CABLE, 3 METER	
2	492-BBDI	C13 TO C14, PDU STYLE, 12 AMP, 6.5 FEET (2M) POWER CORD, NORTH AMERICA	
1	350-BBXS	POWERPROTECT DP 2U BEZEL	
1	340-CHLV	IDPA DP4400 SHIPPING	
1	389-DSWP	POWEREDGE R740 CE, CCC, BIS MARKING	
1	385-BBNZ	IDRAC9, ENTERPRISE	
1	461-AAEM	TRUSTED PLATFORM MODULE 2.0	
1	340-CORZ	POWEREDGE R740 SHIPPING MATERIAL	
1	845-7139	DELL EMC PRODUCTION READY FOR DATA PROTECTION: ONSITE	Appendix I
1	626-BBBI	STORAGE DELL FULFILLED INFO	
1	210-AWPV	GRANULAR RECOVERY	
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	528-BFNZ	EMC GRANULAR RECOVERY MICROSOFT MID=CA	
1	900-9997	ON-SITE INSTALLATION DECLINED	
1	210-ARZC	RECOVER POINT FOR VIRTUAL MACHINE	
1	528-CJZP	RP4VM 5VM STARTER PACK FOR DP4400	
1	838-3736	5 YEARS PROSUPPORT PLUS MISSION CRITICAL RP4VM STARTER PACK SOFTWARE SUPPORT-MAINTENANCE	Appendix D
1	823-4346	PROSUPPORT PLUS MISSION CRITICAL, SOFTWARE ENTITLEMENT, 5 YEARS	Appendix D
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	900-9997	ON-SITE INSTALLATION DECLINED	
1	626-BBBG	STORAGE SOFTWARE INFO	
1	379-BDTQ	THANK YOU FOR BUYING DELL EMC	
1	210-AWOI	IDPA DP4400 24TB 10G QP NDC X710 SFP+	
1	321-BFRC	IDPA DP4400 24TB 10G QP NDC X710 SFP+ CONFIGURATION TPM	
1	329-BDWH	PSNT INFO	
1	350-BBSU	IDPA DP4400 BRANDING	
1	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
1	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	
2	528-CJZE	IDPA DP4400 ENV CONFIG 12TB	
3	528-CJZD	IDPA DP4400 SW 12TB EXPN	
1	528-CKBD	IDPA BU APP ENABLER ENTRY=IA	
1	528-CKBE	FEDERATED REPORTING SERVER ENTRY=IA	
1	528-CKBF	IDPA TARGET PROTOCOL ENABLER ENTRY=CA	
1	528-CKBG	VREALIZE ENABLER ENTRY=IA	
1	528-CKBH	IDPA BOOSTFS ENABLER ENTRY=IA	
1	528-CKBI	IDPA BU SEARCH ENABLER ENTRY=CA	
1	528-CKBJ	ANALYTICS ENABLER ENTRY=CB	
1	528-CKBM	DATA PROTECTION CENTRAL FOR DPD=CA	
1	838-3716	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 ENV ENABLERS SOFTWARE SUPPORT-MAINTENANCE	Appendix D
1	800-BBSN	IDPA DP4400 PLATFORM HYPERVISOR	
1	800-BBSL	IDPA DP4400 PLATFORM HPVSR MAINT 5YR	
1	528-BEHL	IDPA DP4400 CLOUD TIER 5TB STARTER PACK	
1	332-1286	US ORDER	
1	528-CJZM	IDPA DP4400 CLOUD DR 5TB STARTER PACK	
1	658-BDZK	IDPA DP4400 SOFTWARE FACTORY INSTALLED	
4	470-AAGP	DELL NETWORKING, CABLE, SFP+ TO SFP+, 10GBE, COPPER TWINAX DIRECT ATTACH CABLE, 3 METER	
2	492-BBDI	C13 TO C14, PDU STYLE, 12 AMP, 6.5 FEET (2M) POWER CORD, NORTH AMERICA	
1	350-BBXS	POWERPROTECT DP 2U BEZEL	
1	340-CHLV	IDPA DP4400 SHIPPING	
1	389-DSWP	POWEREDGE R740 CE, CCC, BIS MARKING	
1	385-BBNZ	IDRAC9, ENTERPRISE	
1	461-AAEM	TRUSTED PLATFORM MODULE 2.0	
1	340-CORZ	POWEREDGE R740 SHIPPING MATERIAL	
1	845-7139	DELL EMC PRODUCTION READY FOR DATA PROTECTION: ONSITE	Appendix I
1	626-BBBI	STORAGE DELL FULFILLED INFO	
1	210-AWPV	GRANULAR RECOVERY	
1	929-3709	THANK YOU FOR YOUR ORDER	

1	935-6720	THANK YOU FOR YOUR ORDER	
1	528-BFNZ	EMC GRANULAR RECOVERY MICROSOFT MID=CA	
1	838-3776	5 YEARS PROSUPPORT PLUS MISSION CRITICAL EMC GRANULAR RECOVERY MICROSOFT SOFTWARE SUPPORT-MAINT	Appendix D
1	900-9997	ON-SITE INSTALLATION DECLINED	
1	210-ARZC	RECOVER POINT FOR VIRTUAL MACHINE	
1	528-CJZP	RP4VM 5VM STARTER PACK FOR DP4400	
1	838-3736	5 YEARS PROSUPPORT PLUS MISSION CRITICAL RP4VM STARTER PACK SOFTWARE SUPPORT-MAINTENANCE	Appendix D
1	823-4346	PROSUPPORT PLUS MISSION CRITICAL, SOFTWARE ENTITLEMENT, 5 YEARS	Appendix D
1	929-3709	THANK YOU FOR YOUR ORDER	
1	935-6720	THANK YOU FOR YOUR ORDER	
1	900-9997	ON-SITE INSTALLATION DECLINED	
1	626-BBBG	STORAGE SOFTWARE INFO	
		Networking Hardware/Software	
12	470-ACMN	DELL NETWORKING CABLE, OM4 LC/LC FIBER CABLE, (OPTICS REQUIRED), 10 METER, CUSTOMER KIT	
4	210-APFB	DELL EMC S5248F-ON SWITCH, 48X25GBE SFP28, 4X100GBE QSFP28, 2X100GBE QSFP-DD, PSU TO IO, 2XPSU, OS10	
4	343-BBRX	VLT TECH SHEET DOCUMENT	
4	343-BBLP	DELL EMC S52XX-ON SERIES USER GUIDE	
4	634-BRUN	OS10 ENTERPRISE, S5248F-ON	
8	407-BBSG	DELL NETWORKING, TRANSCEIVER, 40GBE QSFP+ SM4, 850-940NM, LC DUPLEX, 200M ON OM3 / 250M ON OM4	
8	470-ABOU	DELL NETWORKING CABLE, 100GBE QSFP28 TO QSFP28, PASSIVE COPPER DIRECT ATTACH CABLE, 0.5 METER	
12	470-ABOZ	DELL NETWORKING, CABLE, SFP+ TO SFP+, 10GBE, PASSIVE COPPER TWINAX DIRECT ATTACH CABLE, 2 METER	
16	470-AAGP	DELL NETWORKING, CABLE, SFP+ TO SFP+, 10GBE, COPPER TWINAX DIRECT ATTACH CABLE, 3 METER	
40	470-ACEV	DELL NETWORKING, CABLE, SFP28 TO SFP28, 25GBE, PASSIVE COPPER TWINAX DIRECT ATTACH CABLE, 3 METER	
4	450-AAFH	POWER CORD, 125V, 15A, 10 FEET, NEMA 5-15/C13	
4	450-AAFH	POWER CORD, 125V, 15A, 10 FEET, NEMA 5-15/C13	
2	210-AEDP	DELL NETWORKING S3048-ON, 48X 1GBE, 4X SFP+ 10GBE PORTS, STACKING, PSU TO IO AIR, 1X AC PSU, DNOS 9	
2	634-BDXE	SOFTWARE, RIGHTS TO USE L3 ON OS9, S3048-ON	
2	528-BBSY	OS9 INSTALLED ON S3048-ON, WITH ENTITLEMENT TO OS10 ENTERPRISE	
4	407-BBEF	DELL NETWORKING, TRANSCEIVER, SFP+, 10GBE, SR, 850NM WAVELENGTH, 300M REACH	
8	470-AAGP	DELL NETWORKING, CABLE, SFP+ TO SFP+, 10GBE, COPPER TWINAX DIRECT ATTACH CABLE, 3 METER	
2	450-AASX	DELL NETWORKING, JUMPER CORD, 250V, 12A, 2 METERS, C13/C14, US	
2	634-BCXR	DELL NETWORKING S3048-ON USER GUIDE	
2	210-AWOS	S4112F DELL NETWORKING SWITCH	
2	343-BBQL	S4112 SERIES USER GUIDE	
2	750-ACVX	S4112F INSTALL KIT	
2	750-ACVY	DELL SWITCH, DUAL TRAY KIT FOR S4112F, 1U	
2	750-ACWB	EMC GEN3 SWITCH RAIL 22-31IN OFFSET KIT, S4112F	
2	528-CKSS	OS10 ENTERPRISE SOFTWARE, S4112F	
2	210-AWOS	S4112F DELL NETWORKING SWITCH	
2	343-BBQL	S4112 SERIES USER GUIDE	
2	750-ACVX	S4112F INSTALL KIT	
2	750-ACVY	DELL SWITCH, DUAL TRAY KIT FOR S4112F, 1U	
2	750-ACWB	EMC GEN3 SWITCH RAIL 22-31IN OFFSET KIT, S4112F	
2	528-CKSS	OS10 ENTERPRISE SOFTWARE, S4112F	
		Domain Hardware/Software	
3	210-AQUB	POWEREDGE R340 SERVER	
3	329-BEQV	POWEREDGE R340 MLK MOTHERBOARD	
3	461-AADZ	NO TRUSTED PLATFORM MODULE	
3	321-BDUX	3.5" CHASSIS WITH UP TO 4 HOT PLUG HARD DRIVES	
3	340-CHIJ	POWEREDGE R340 SHIPPING	
3	340-COPB	POWEREDGE R340 SHIPPING MATERIAL FOR 3.5" CHASSIS	
3	389-DSUH	POWEREDGE R340 CCC AND BIS MARKING, NO CE MARKING	
3	338-BUIY	INTEL XEON E-2224 3.4GHZ, 8M CACHE, 4C/4T, TURBO (71W)	

3	412-AAPW	HEATSINK FOR 80W OR LESS CPU	
3	370-AGNY	3200MT/S UDIMM	
3	370-AAIP	PERFORMANCE OPTIMIZED	
3	370-AGQU	16GB UDIMM, 3200MT/S, ECC	
3	780-BCDN	RAID 1	
3	405-AAMT	PERC H330 RAID CONTROLLER	
6	400-BDSV	480GB SSD SATA MIXED USE 6GBPS 512E 2.5IN HOT PLUG, 3.5IN HYB CARR S4610 DRIVE	
3	619-ABVR	NO OPERATING SYSTEM	
3	605-BBFN	NO MEDIA REQUIRED	
3	385-BBKT	IDRAC9,ENTERPRISE	
3	379-BCQY	IDRAC GROUP MANAGER, DISABLED	
3	379-BCRG	IDRAC,FACTORY GENERATED PASSWORD	
3	330-BBMH	PCIE RISER, 1X FH X8 PCIE GEN3 SLOT, 1X LP X4 PCIE GEN3 SLOT, R240/R340	
3	384-BBWF	STANDARD FAN	
3	542-BBBP	ON-BOARD LOM	
3	540-BBHP	INTEL X710 DUAL PORT 10GBE DIRECT ATTACH SFP+ ADAPTER, PCIE FULL HEIGHT	
6	470-AAGP	DELL NETWORKING, CABLE, SFP+ TO SFP+, 10GBE, COPPER TWINAX DIRECT ATTACH CABLE, 3 METER	
3	429-ABHM	DVD ROM, SATA, INTERNAL FOR HOT PLUG CHASSIS	
3	450-AEUV	DUAL HOT PLUG POWER SUPPLIES 350W	
6	450-AALV	POWER CORD - C13, 3M, 125V, 15A (NORTH AMERICA, GUAM, NORTH MARIANAS, PHILIPPINES, SAMOA, VIETNAM)	
3	325-BCHH	STANDARD BEZEL	
3	350-BBSD	DELL EMC LUGGAGE TAG	
3	384-BBBL	PERFORMANCE BIOS SETTINGS	
3	770-BDEL	READYRAILS SLIDING RAILS WITH CABLE MANAGEMENT ARM	
3	631-AACK	NO SYSTEMS DOCUMENTATION, NO OPENMANAGE DVD KIT	
3	366-8125	CONFIGURATION SERVICES, STANDARD ISG ASSET SERVICE REPORT	
3	332-1286	US ORDER	
		Installation	
1	821-4441	PRODEPLOY PLUS DELL EMC DATA PROTECTION DP4XXX APPLIANCE	Appendix I
1	821-4442	PRODEPLOY PLUS DELL EMC DATA PROTECTION DP4XXX APPLIANCE DEPLOYMENT VERIFICATION	Appendix I
1	825-7260	PRODEPLOY PLUS ADD ON POWERPROTECT APP DIRECT MICROSOFT DEPLOY REQUIRES PRODEPLOY PLUS	Appendix I
1	821-4441	PRODEPLOY PLUS DELL EMC DATA PROTECTION DP4XXX APPLIANCE	Appendix I
1	821-4442	PRODEPLOY PLUS DELL EMC DATA PROTECTION DP4XXX APPLIANCE DEPLOYMENT VERIFICATION	Appendix I
1	825-7261	PRODEPLOY PLUS ADD ON POWERPROTECT APP DIRECT DATABASE DEPLOY REQUIRES PRODEPLOY PLUS	Appendix I
1	821-9420	PRODEPLOY PLUS DELL EMC DATA PROTECTION SUITE FOR VMWARE	Appendix I
1	821-9421	PRODEPLOY PLUS DELL EMC DATA PROTECTION SUITE FOR VMWARE DEPLOYMENT VERIFICATION	Appendix I
1	821-9412	PRODEPLOY DELL EMC DATA PROTECTION SUITE FOR VMWARE - REMOTE	Appendix I
1	821-9413	PRODEPLOY DELL EMC DATA PROTECTION SUITE FOR VMWARE DEPLOYMENT VERIFICATION - REMOTE	Appendix I
1	823-8991	PRODEPLOY PLUS DELL EMC RECOVERPOINT FOR VIRTUAL MACHINES	Appendix I
1	823-8992	PRODEPLOY PLUS DELL EMC RECOVERPOINT FOR VIRTUAL MACHINES DEPLOYMENT VERIFICATION	Appendix I
1	823-9268	PRODEPLOY ADDITIONAL DEPLOYMENT TIME:8 HOUR ONSITE DATA PROTECTION TECHNICAL RESOURCE	Appendix I
12	819-2575	PRODEPLOY PLUS DELL EMC VXRAIL DEPLOYMENT	Appendix I
12	819-2576	PRODEPLOY PLUS DELL EMC VXRAIL DEPLOYMENT VERIFICATION	Appendix I
4	823-9274	PRODEPLOY ADDITIONAL DEPLOYMENT TIME:8 HOUR ONSITE NETWORKING TECHNICAL RESOURCE	Appendix I
4	804-2152	PRODEPLOY PLUS DELL NETWORKING S SERIES 5XXX SWITCH - DEPLOYMENT	Appendix I
4	804-2153	PRODEPLOY PLUS DELL NETWORKING S SERIES 5XXX SWITCH - DEPLOYMENT	Appendix I
2	805-2397	PRODEPLOY PLUS DELL NETWORKING S SERIES 3XXX SWITCH - DEPLOYMENT	Appendix I
2	805-2400	PRODEPLOY PLUS DELL NETWORKING S SERIES 3XXX SWITCH - DEPLOYMENT	Appendix I
3	804-6750	PRODEPLOY PLUS DELL SERVER R SERIES 1U/2U - DEPLOYMENT	Appendix I
3	804-6751	PRODEPLOY PLUS DELL SERVER R SERIES 1U/2U - DEPLOYMENT VERIFICATION	Appendix I
1	831-5280	PRODEPLOY PLUS ADD-ON FOR POWERSCALE ADVANCED BUNDLE DESIGN	Appendix I
4	812-4005	PRODEPLOY PLUS TRAINING CREDITS 300 REDEEM AT EDUCATION.DELLEMCM.COM EXPIRES 1YR FROM ORDER DATE	Appendix I
4	829-3033	PRODEPLOY PLUS FOR POWERSCALE NODE	Appendix I

4	812-4005	PRODEPLOY PLUS TRAINING CREDITS 300 REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FROM ORDER DATE	Appendix I
4	829-3033	PRODEPLOY PLUS FOR POWERSCALE NODE	Appendix I
		Training	
1	812-4027	PRODEPLOY PLUS TRAINING 900	Appendix E
1	812-4027	PRODEPLOY PLUS TRAINING 900	Appendix E
1	812-4011	PRODEPLOY PLUS TRAINING 200	Appendix E
1	812-4011	PRODEPLOY PLUS TRAINING 200	Appendix E
25,800	848-2266	PARTNER ONLY EDUCATION TRAINING CREDITS 1-REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FRM ORDER	Appendix E
12	812-4011	PRODEPLOY PLUS TRAINING CREDITS 200 REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FROM ORDER DATE	Appendix E
4	812-4037	PRODEPLOY PLUS TRAINING CREDITS 500 REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FROM ORDER DATE	Appendix E
2	812-4037	PRODEPLOY PLUS TRAINING CREDITS 500 REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FROM ORDER DATE	Appendix E
3	812-4005	PRODEPLOY PLUS TRAINING CREDITS 300 REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FROM ORDER DATE	Appendix E
25,800	848-2266	PARTNER ONLY EDUCATION TRAINING CREDITS 1-REDEEM AT EDUCATION.DELLEMC.COM EXPIRES 1YR FRM ORDER	Appendix E
1,407	SVC-CR-20	VMWare CONSULTING & LEARNING CREDITS-PREPAID SERVICES PSO CREDIT 1201+	Appendix E
		Migration	
24	848-8792	DATA MIGRATION SERVICES: REMOTE FILE MIGRATION 10-50 TB	Appendix I
30	848-8795	DATA MIGRATION SERVICES: REMOTE VIRTUAL V2V MIGRATION 10-50 VMS	Appendix I
5	848-8802	DATA MIGRATION SERVICES: ONSITE TECHNICAL RESOURCE - BLOCK/FILE/OBJECT/VIRTUAL (8 HOURS)	Appendix I
		Erasure	
2	847-2780	DATA SANITIZATION FOR ENTERPRISE ONSITE-DATA PROTECTION	Appendix H
2	843-6817	DATA SANITIZATION FOR ENTERPRISE ONSITE-MID-RANGE STORAGE	Appendix H
2	843-8468	DATA SANITIZATION FOR ENTERPRISE ONSITE-UNSTRUCTURED STORAGE	Appendix H
		Residency	
12	848-9026	ONSITE RESIDENCY FOR HYPERCONVERGED INFRASTRUCTURE, 5 DAYS FOR 1 WEEK	Appendix F
4	848-9014	ONSITE RESIDENCY FOR DATA PROTECTION, 5 DAYS FOR 1 WEEK	Appendix F
8	848-9032	ONSITE RESIDENCY FOR POWERSCALE/ ISILON, 5 DAYS FOR 1 WEEK	Appendix F
1	VMWare	VMWare Onsite Residency (65) Consulting Days Over Duration of 13 Weeks	Appendix G
		Hardware Support	
1	838-3341	DELL HARDWARE LIMITED WARRANTY 1 YEAR	Appendix D
1	838-3357	PROSUPPORT PLUS MISSION CRITICAL 7X24 HW TECHNICAL SUPPORT AND ASSISTANCE 5 YEARS	Appendix D
1	838-3362	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 1 YEAR	Appendix D
1	838-3363	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 4 YEARS EXTENDED	Appendix D
1	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
1	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	
1	844-0821	KEEP YOUR HARD DRIVE FOR ENTERPRISE 5 YEARS	Appendix D
1	838-3341	DELL HARDWARE LIMITED WARRANTY 1 YEAR	Appendix D
1	838-3357	PROSUPPORT PLUS MISSION CRITICAL 7X24 HW TECHNICAL SUPPORT AND ASSISTANCE 5 YEARS	Appendix D
1	838-3362	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 1 YEAR	Appendix D
1	838-3363	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 4 YEARS EXTENDED	Appendix D
1	844-0821	KEEP YOUR HARD DRIVE FOR ENTERPRISE 5 YEARS	Appendix D
12	819-0336	DELL HARDWARE LIMITED WARRANTY 1 YEAR	Appendix D
12	819-0444	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, 4 YEARS EXTENDED	Appendix D
12	819-0445	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, 1 YEAR	Appendix D
12	819-0455	PROSUPPORT PLUS 7X24 HW TECH SUPPORT AND ASSISTANCE, 5 YEARS	Appendix D

12	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
12	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	
12	843-9366	KEEP YOUR HARD DRIVE FOR ENTERPRISE 5 YEARS	Appendix D
4	818-4856	DELL HARDWARE LIMITED WARRANTY 1 YEAR	Appendix D
4	818-4898	PROSUPPORT PLUS:MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH,1 YEAR	Appendix D
4	818-4905	PROSUPPORT PLUS MISSION CRITICAL:7X24 HW/SW TECHNICAL SUPPORT AND ASSISTANCE, 5 YEARS	Appendix D
4	818-4906	PROSUPPORT PLUS:MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, 4 YEARS EXTENDED	Appendix D
4	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
4	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	
4	997-6306	INFO 3RD PARTY SOFTWARE WARRANTY PROVIDED BY VENDOR	
2	802-7389	DELL HARDWARE LIMITED WARRANTY INITIAL YEAR	Appendix D
2	802-7400	DELL HARDWARE LIMITED WARRANTY EXTENDED YEAR(S)	
2	802-7420	PROSUPPORT PLUS: MISSION CRITICAL 8-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, INITIAL YEAR	Appendix D
2	802-7445	PROSUPPORT PLUS: 7X24 HW/SW TECH SUPPORT AND ASSISTANCE, 5 YEAR	Appendix D
2	802-7447	PROSUPPORT PLUS: MISSION CRITICAL 8-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, 4 YEAR EXTENDED	Appendix D
2	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
3	822-7640	DELL HARDWARE LIMITED WARRANTY PLUS ON SITE SERVICE	Appendix D
3	822-7730	PROSUPPORT PLUS: MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, 1 YEAR	Appendix D
3	822-7735	PROSUPPORT PLUS: MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH, 4 YEARS EXTENDED	Appendix D
3	822-7747	PROSUPPORT PLUS: MISSION CRITICAL 7X24 HW/SW TECHNICAL SUPPORT AND ASSISTANCE, 5 YEARS	Appendix D
3	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	Appendix D
3	955-9041	DELL HARDWARE LIMITED WARRANTY PLUS ON SITE SERVICE EXTENDED YEAR	Appendix D
3	980-3634	KEEP YOUR HARD DRIVE, 5 YEAR	Appendix D
4	831-4649	DELL HARDWARE LIMITED WARRANTY INITIAL YEAR	Appendix D
4	831-4692	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 1 YEAR	Appendix D
4	831-4696	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 4 YEARS EXTENDED	Appendix D
4	831-4703	PROSUPPORT PLUS MISSION CRITICAL 7X24 HW-SW TECH SUPPORT AND ASSISTANCE 5 YEARS	Appendix D
4	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	Appendix D
4	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	Appendix D
4	831-4649	DELL HARDWARE LIMITED WARRANTY INITIAL YEAR	Appendix D
4	831-4692	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 1 YEAR	Appendix D
4	831-4696	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 4 YEARS EXTENDED	Appendix D
4	831-4703	PROSUPPORT PLUS MISSION CRITICAL 7X24 HW-SW TECH SUPPORT AND ASSISTANCE 5 YEARS	Appendix D
4	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	Appendix D
4	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	Appendix D
4	843-7794	KEEP YOUR HARD DRIVE FOR ENTERPRISE 5 YEARS	Appendix D
4	843-7794	KEEP YOUR HARD DRIVE FOR ENTERPRISE 5 YEARS	Appendix D
			Appendix D
		Software Support	Appendix D
2	844-2398	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 ENV CONFIG 12TB SOFTWARE SUPPORT-MAINTENANCE	Appendix D
3	838-3476	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CAPACITY EXPANSION PACK 12TB SOFTWARE SPT-MAINT	Appendix D
1	838-3496	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CAPACITY EXPANSION PACK 12TB SFTWR SPT CONTRACT	Appendix D

1	844-2478	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 ENV CONFIG 12TB SOFTWARE SUPPORT CONTRACT	Appendix D
1	838-3716	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 ENV ENABLERS SOFTWARE SUPPORT-MAINTENANCE	Appendix D
1	838-3596	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CLOUD TIER STARTER PACK SOFTWARE SUPPORT-MAINTENANCE	Appendix D
1	838-3656	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CLOUD DR STARTER PACK SOFTWARE SUPPORT-MAINTENANCE	Appendix D
1	838-3776	5 YEARS PROSUPPORT PLUS MISSION CRITICAL EMC GRANULAR RECOVERY MICROSOFT SOFTWARE SUPPORT-MAINT	Appendix D
2	844-2398	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 ENV CONFIG 12TB SOFTWARE SUPPORT-MAINTENANCE	Appendix D
3	838-3476	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CAPACITY EXPANSION PACK 12TB SOFTWARE SPT-MAINT	Appendix D
1	838-3496	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CAPACITY EXPANSION PACK 12TB SFTWR SPT CONTRACT	Appendix D
1	844-2478	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 ENV CONFIG 12TB SOFTWARE SUPPORT CONTRACT	Appendix D
1	838-3596	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CLOUD TIER STARTER PACK SOFTWARE SUPPORT-MAINTENANCE	Appendix D
6	823-4386	PROSUPPORT PLUS MISSION CRITICAL, DATA PROTECTION SUITE FOR VMWARE, 1 SOCKET, 5 YEARS	Appendix D
1	838-3656	5 YEARS PROSUPPORT PLUS MISSION CRITICAL IDPA DP4400 CLOUD DR STARTER PACK SOFTWARE SUPPORT-MAINTENANCE	Appendix D
12	819-0618	SERIES-E, ALL-FLASH, ADD-ON SUPPORT, 5 YEARS	Appendix D
12	823-4106	PROSUPPORT PLUS MISSION CRITICAL, VSAN, ENTERPRISE, 1 PROCESSOR, 5 YEARS	Appendix D
12	819-0590	5 YEARS, PROSUPPORT PLUS WITH MISSION CRITICAL, SOFTWARE SUPPORT	Appendix D
4	848-8536	5 YEARS PROSUPPORT PLUS OS10 ENTERPRISE SOFTWARE SUPPORT-MAINTENANCE	Appendix D
2	997-6306	INFO 3RD PARTY SOFTWARE WARRANTY PROVIDED BY VENDOR	
2	838-0404	DELL HARDWARE LIMITED WARRANTY INITIAL YEAR	Appendix D
2	838-0447	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 1 YEAR	Appendix D
2	838-0451	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 4 YEARS EXTENDED	Appendix D
2	838-0458	PROSUPPORT PLUS MISSION CRITICAL 7X24 HW-SW TECH SUPPORT AND ASSISTANCE 5 YEARS	Appendix D
2	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
2	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	
4	857-6538	5 YEARS PROSUPPORT PLUS MISSION CRITICAL ONEFS ENC KEY MGT BASE 8TB SOFTWARE SUPPORT-MAINTENANCE	Appendix D
32	831-8147	PROSUPPORT PLUS MISSION CRITICAL ONEFS CAPACITY SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	831-9307	PROSUPPORT PLUS MISSION CRITICAL HDFS FOR ONEFS SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	831-9067	PROSUPPORT PLUS MISSION CRITICAL SMARTLOCK BASE SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
32	831-9087	PROSUPPORT PLUS MISSION CRITICAL SMARTLOCK CAPACITY SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	831-8367	PROSUPPORT PLUS MISSION CRITICAL ENTERPRISE ADVANCED BUNDLE BASE SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
32	831-8387	PROSUPPORT PLUS MISSION CRITICAL ENTERPRISE ADVANCED BUNDLE CAPACITY SOFTWARE SPT-MAINTENANCE 5 YEARS	Appendix D
32	831-4739	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE CAPACITY ADD-ON PER TERABYTE 5 YEARS	Appendix D
4	626-BBBI	STORAGE DELL FULFILLED INFO	
2	838-0404	DELL HARDWARE LIMITED WARRANTY INITIAL YEAR	Appendix D
2	838-0447	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 1 YEAR	Appendix D
2	838-0451	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE SERVICE WITH EMERGENCY DISPATCH 4 YEARS EXTENDED	Appendix D
2	838-0458	PROSUPPORT PLUS MISSION CRITICAL 7X24 HW-SW TECH SUPPORT AND ASSISTANCE 5 YEARS	Appendix D
2	951-2015	THANK YOU FOR CHOOSING DELL PROSUPPORT PLUS. FOR TECH SUPPORT, VISIT //WWW.DELL.COM/CONTACTDELL	
2	975-3461	DELL LIMITED HARDWARE WARRANTY EXTENDED YEAR(S)	

1	835-9439	PROSUPPORT PLUS MISSION CRITICAL-DATAIQ INSTANCE SOFTWARE SUPPORT CONTRACT 5 YEARS	Appendix D
1	835-9419	PROSUPPORT PLUS MISSION CRITICAL-DATAIQ INSTANCE SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	857-6538	5 YEARS PROSUPPORT PLUS MISSION CRITICAL ONEFS ENC KEY MGT BASE 8TB SOFTWARE SUPPORT-MAINTENANCE	Appendix D
32	831-8147	PROSUPPORT PLUS MISSION CRITICAL ONEFS CAPACITY SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	831-9307	PROSUPPORT PLUS MISSION CRITICAL HDFS FOR ONEFS SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	831-9067	PROSUPPORT PLUS MISSION CRITICAL SMARTLOCK BASE SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
32	831-9087	PROSUPPORT PLUS MISSION CRITICAL SMARTLOCK CAPACITY SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
4	831-8367	PROSUPPORT PLUS MISSION CRITICAL ENTERPRISE ADVANCED BUNDLE BASE SOFTWARE SUPPORT-MAINTENANCE 5 YEARS	Appendix D
32	831-8387	PROSUPPORT PLUS MISSION CRITICAL ENTERPRISE ADVANCED BUNDLE CAPACITY SOFTWARE SPT-MAINTENANCE 5 YEARS	Appendix D
32	831-4739	PROSUPPORT PLUS MISSION CRITICAL 4-HOUR 7X24 ON-SITE CAPACITY ADD-ON PER TERABYTE 5 YEARS	Appendix D
		Optional Support	
1	823-9268	PRODEPLOY ADDITIONAL DEPLOYMENT TIME:8 HOUR ONSITE DATA PROTECTION TECHNICAL RESOURCE	Appendix I
1	823-9286	PRODEPLOY ADDITIONAL DEPLOYMENT TIME:8 HOUR ONSITE HYPER-CONVERGED INFRASTRUCTURE TECHNICAL RESOURCE	Appendix I
1	823-9279	PRODEPLOY ADDITIONAL DEPLOYMENT TIME:8 HOUR ONSITE STORAGE TECHNICAL RESOURCE	Appendix I
1	PM	PRODEPLOY ADDITIONAL DEPLOYMENT TIME:8 HOUR ONSITE STORAGE Project Manager	Appendix I



1.5 TERMS AND CONDITIONS

By signing below, I certify that I have reviewed this Request for Proposal in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that, to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Advizex Technologies, LLC

(Company)

Scott Hess, Proposal Desk Manager

(Representative Name, Title)



440-622-1089 / 216-901-1818

(Contact Phone/Fax Number)

12/11/2021

(Date)



1.6 ATTACHMENT A – COST SHEET

Please refer to the separate COST PROPOSAL.



1.7 DISCLOSURE OF INTERESTED PARTIES

West Virginia Ethics Commission



Disclosure of Interested Parties to Contracts

Pursuant to W. Va. Code § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of \$1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

"Business entity" means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

"Interested party" or "Interested parties" means:

- (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
- (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
- (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

"State agency" means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of W. Va. Code § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: ethics@wv.gov; website: ethics.wv.gov.

West Virginia Ethics Commission
Disclosure of Interested Parties to Contracts

(Required by W. Va. Code § 6D-1-2)

Name of Contracting Business Entity: Advizex Technologies, LLC

Address: 6480 Rockside Woods Blvd. S. Suite 190 Independence, OH 44131-2224

Name of Authorized Agent: Mika Munoz, Account Executive Address: See Above - mmunoz@advizex.com

Contract Number: CRFO 0705 LOT2200000001 Contract Description: Scalable Infrastructure Storage Solution

Governmental agency awarding contract: Lottery

☐ Check here if this is a Supplemental Disclosure

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (attach additional pages if necessary):

1. Subcontractors or other entities performing work or service under the Contract

☒ Check here if none, otherwise list entity/individual names below.

2. Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)

☐ Check here if none, otherwise list entity/individual names below.

3. Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)

☒ Check here if none, otherwise list entity/individual names below.

Signature:  Date Signed: 12/11/2021

Notary Verification

State of Ohio, County of Cuyahoga

I, Mika Munoz, Account Executive, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 11th day of December, 2021.

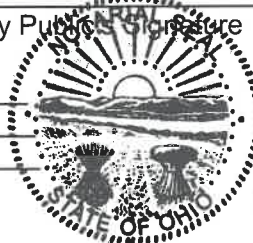

Notary Public's Signature

To be completed by State Agency:

Date Received by state agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____



SCOTT HESS
NOTARY PUBLIC
STATE OF OHIO
Recorded in
Cuyahoga County
My Comm. Exp. 12/26/2025
Revised March 6, 2019



1.8 PURCHASING AFFIDAVIT

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: Advizex Technologies, LLC

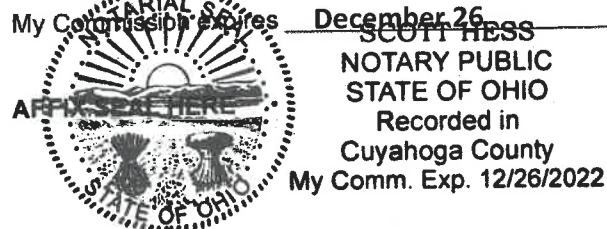
Authorized Signature: [Signature] Date: 12/11/2021

State of Ohio

County of Cuyahoga, to-wit:

Taken, subscribed, and sworn to before me this 11th day of December, 2021.

My Commission Expires December 26, 2022.



NOTARY PUBLIC

[Signature]

4.2.1 SCORABLE REQUIREMENTS

NON-MANDATORY (SCORABLE) REQUIREMENTS

4.2.1.1 to 4.2.1.46 General Specifications- Project Goals

4.2.1.1.1	<p>4.2.1.1. Describe how your solution meets the following objectives for the original equipment manufacturer (OEM):</p> <p>4.2.1.1.1. The manufacturer of the proposed products should be listed on the Gartner Magic Quadrant report as defined below matching the technology type. Gartner Documents provided. (see Appendix 1 for Gartner Reports).</p> <ul style="list-style-type: none"> • HCI — as described in 2019 Gartner Magic Quadrant report for HCI. • Dell VxRAIL = Leaders • DPS — as described in 2020 Gartner Magic Quadrant report for Data Center Backup and recovery solutions. • Dell IDPA = Leaders • UDS - as described in 2020 Gartner Magic Quadrant report for Distributed File Systems and Object Storage. • Dell Isilon/ Powerscale = Leaders • Networking — as described in 2020 Magic Quadrant for Data Center and Cloud Networking. • Dell Networking = Visionary • For each subsystem (HCI/DPS/UDS/Networking) , identify where you are ranked according to the following categories: Not Listed, Niche, Visionary, Challengers, Leaders
	<p>Advizex Response:</p> <p>Our proposed solution consists of products from Dell EMC. The products have been rated in the Gartner Magic Quadrants as follows:</p> <ul style="list-style-type: none"> • HCI — Dell VxRAIL = Leaders • DPS — Dell IDPA = Leaders • UDS - Dell Isilon/ Powerscale = Leaders • Networking — Dell Networking = Visionary
4.2.1.2	<p>Please describe in detail how your solution provides for Firmware and software upgrades to the HCI, DPS, UDS and Networking. Vendor provided solutions (HCI, DPS, UDS and Networking) should have the ability to patch all components simultaneously from a single patch deployment; Not requiring a separate patch</p>

for each component of the entire solution. Patching should be a non-disruptive patch and upgrade capability. Non-disruptively means all data is accessible, writable, usable, and available prior, during, and after the upgrade process. This simplified update package should also include patches, updates, and new versions of software defined storage software, hypervisor, management tools, security updates, as well as hardware firmware update and drivers.

Advizex Response:

100% Comply

Advizex proposes and recommends Dell EMC VxRail, IDPA, PowerScale, and PowerSwitch to meet your requirements.

HCI – Dell EMC/VMware VxRail is the result of a unique industry partnership between Dell and VMware. Customers, like WVL, benefit in that:

- The hardware releases, VMware software releases, vSphere, vSAN, are co-developed, tested, and verified by the VxRail engineering team before release
- These releases are bundled into (1) one unified patch update with a combined build level and version number.
- The build number, for example Version 7.0.300 is all that WVL needs to manage and determine interoperability with various potential hardware versions.
- When performing updates on VxRail – WVL can choose a supported build level from one of several choices. Specifically, there are Vsphere 6.7 and 7.0 releases available now that are both supported. This gives WVL choice on what releases to run without having to be responsible for ensuring all components are compatible. Dell and VMware perform testing and support these bundles.
- Another significant benefit with VxRail is that, unlike some other HCI solutions, WVL does not have to install every update. WVL can skip minor updates and choose only to install major releases. Some competing solutions require every patch to be installed in series to remain supported.
- All Hardware and software updates and patches are regression tested on the exact same certified hardware as all other customers
- Requires no customer-owned development/test environments to ensure that the updates or patches will be compatible.
- No other OEM except Dell EMC can provide this service on a continual basis throughout the supported life of the products.

- Dell EMC also packages vSphere, vSAN, drivers, firmware, VxRail manager, security patches into one single update that can be applied to each cluster node at a time.
- Because of the inherent architecture of HCI and the proposed 6 node solution, there is no downtime required for these updates and no single point of failure.
- The 6 node cluster can accommodate 2 failures at once, which means that all data will be accessible, writable, usable, and available prior, during, and after the lifecycle process, even if an unexpected node failure occurs during the maintenance windows. Updates are non-disruptive.

DPS – Similar to VxRail, Dell EMC's Integrated Data Protection Appliance (IDPA) is a fully engineered solution, where Dell's server and Data protection software divisions partner and deliver a unique customer advantage in consolidated system software release packages for server firmware, DPS, software, patches. These system software patches ensure:

- All DPS software, including Data Domain, Networker, and Avamar, remain compatible with the server hardware environment as well as firmware on components within the IDPA.
- Greatly simplified management for WVL, as opposed to, other non-integrated competitive solutions where multiple software applications would need to be updated, on multiple operating systems, and potentially separate non-integrated storage arrays. IDPA is the only solution that fully integrates all WVL's data protection into one 2U simple to use and manage appliance.
- IDPA updates are bundled together and tested as a unified IDPA release, much like VxRail. For example – IDPA version 2.6 is an example of an entire release that combines backup software, storage software, hardware drivers and firmware, management software, hypervisor and security updates from one bundled and tested release. Just like VxRail, Dell ensures that the release is tested and supported as a bundled release, freeing WVL from having to manage code level at the component level.

UDS – PowerScale UDS storage solution helps WVL perform regular software and firmware updates via one streamlined update bundle with automated deployment processes. PowerScale's Non-Disruptive Upgrade process (NDU) supports a variety of modes that allow WVL to balance upgrade time with availability. This Rolling Upgrade provides the highest availability by updating one(1) node at a time and then moving to the next. This mode installs all available software and firmware updates on a node in maintenance mode,

	<p>restart, validate and then moves with the next node. All of this is done while keeping all data accessible, writable, and usable during the upgrade process.</p> <p>In addition to the software upgrade process – PowerScale also has powerful advantages in the areas of hardware lifecycle. Powerscale is a true scale-out cluster architecture – one that gains CPU, RAM, and storage as additional nodes are added. Other UDS products are constrained by a single pair of controllers or in some cases, shared-nothing architecture which cannot scale a common namespace to the degree of PowerScale. The F200 model included in this response supports scale-out of up to 252 nodes in one common cluster and namespace. This scale-out architecture also allows hardware lifecycle management to be done with ease. WVL will be able to simply add new nodes to the existing cluster – automatically expanding the cluster CPU, ram, and storage capabilities – or even “smartfail” older nodes to seamlessly migrate all data off the older nodes non-disruptively so that they can be retired. All of these are non-disruptive activities and can be performed while in production with no-namespace changes.</p> <p>Networking – Dell EMC’s PowerSwitch data center switch updates combined boot code and CPLD (firmware) into one update bundle for WVL. This simplified maintenance for the Top of Rack (TOR) switches is included in the Advizex recommended solution. The TOR environment also includes fully redundant paths for HCI, DPS, and UDS along with high-speed Interconnect switch links (ISL) that eliminate single points of failure in the TOR fabric for these solutions. These configurations allow maintenance to occur with all dependent data services remaining available.</p>
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4.2.1.3	<p>Describe in detail how your solution meets the Lottery's Disaster Recovery and Business Continuity requirements as described in this RFP. This process should account for failover and failback. Provided solution should be capable of automated failover of UDS, HCI and DPS services from one location to another and back again. The software should be capable of automating all steps of the failover process, including but not limited to: NAS services, Active Directory changes, DNS changes, host changes, IP Address changes, and Windows or Linux client access. Solution should include readiness monitoring and continuous testing of the DR features that permit non-disruptive testing while data is being replicated.</p>
	<p>Advizex Response:</p>

100% Comply

The Advizex recommended Dell EMC solution contains a broad range of features and capabilities that WVL can leverage to ensure the highest level of Business continuity and Disaster Recovery preparedness. Advizex understands the goals WVL has set to achieve and has assembled a solution that will meet all of them.

Starting with HCI, Advizex has designed a 6-node HCI cluster, per-site, and configured it with the required capacity from a RAM, compute, storage perspective to fully meet WVL's performance objectives and availability needs with up to (2) two major failures; including complete node failure.

Each of these clusters are capable of independent service. WVL's virtualization needs are configured to tolerate two failures.

The next step is current data availability and synchronization between sites for vSphere. Our solution also includes RecoverPoint for Virtual Machines software (RPVM). It provides journaled replication of all VM's on 15-minute intervals or less. This VM-based replication, as well as consistency groupings, ensure that WVL's Recovery Point Objective (RPO) can be met within 15 minutes for all VMware guests.

The consistency groupings allow WVL to group applications and databases for consistent recovery in the event these clones need to be activated at the Secondary location. RPVM automates changes required to accelerate the Recovery Time Objective (RTO) like IP address changes, DNS registrations, AD changes, and service configuration changes.

RPVM also provides the capability for WVL and their agents to test failover events, scripts, and automations to ensure that they are ready in the event of a disaster. These tests can be done non-disruptively to sample VM's at the secondary site and are destroyed once they are no longer needed.

With HCI, a critical component is often missed; the ability to roll forward changes from DR back to Production. RPVM includes the capability to roll changes made during an actual disaster back into the restored production systems to improve the quality and recovery timeline.

For UDS, Advizex is recommending (2) two PowerScale clusters. (1) one for each location and has partnered with Superna Disaster recovery suite to provide the highest level of failover for UDS services available.

	<p>The PowerScale hardware, at the onset, uses a modular, scale-out architecture with (4) four active-storage nodes and advanced erasure coding HA storage practices. These ensure extremely high Mean Time Between Failure (MTBF) and fault resiliency in each cluster.</p> <p>In the event of a disaster with significantly affected all nodes or the entire data center, the UDS data will have already been replicated to the secondary cluster and the Superna DR solution will automate the failover process for clients to connect to the surviving active cluster.</p> <p>For Data Protection, IDPA uses Data Domain global deduplication and replication functions.</p> <p>With IDPA protecting backups at each location, the internal Data Domains will replicate backup data and catalogs to the alternate locations(s).</p> <p>The single unified data protection console, called System Manager, will be used to monitor SLA's, replication, and switch the backup catalogs from primary to secondary, as needed, to protect workloads that may have been migrated due to a disaster event.</p> <p>The Advizex recommended Dell EMC solution includes:</p> <ul style="list-style-type: none"> • Comprehensive disaster preparedness • High levels of primary redundancy within the solutions • Secondary matched DR systems with full replication of data • Incremental journaled replication to ensure 15-minute RPOs for all VMware environments • Comprehensive and efficient backup solutions for both sites with network efficient and reliable replication • Ensures a consistent ability to restore from backup, if needed <p>These comprehensive capabilities for DR preparedness, recovery, automation, monitoring, and testing will ensure that WVL can deliver a continuous DR testing strategy to ensure the highest levels of application availability achievable today.</p>
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4.2.1.4a	Describe in detail how your DPS solution should catalogue backup jobs and information to be replicated between the Primary and Secondary Site. Describe in detail how you will meet or exceed this specification with your solution.
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	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided IDPA solution includes the Dell Data Protection Suite of software products along with the hardware platform to run them. The included Avamar server backup software provides the features for cataloging backup data and metadata. IDPA also includes Dell EMC Data Domain software, which stores, protects, and replicates the catalog data, metadata, and backup data between each site using Data Domain replication.</p>
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	<p>Please also describe how the backup data can be made available from either the Primary or Secondary Site.</p>
4.2.1.4b	<p>Advizex Response:</p> <p>The Advizex recommended and provided IDPA solution includes the Dell Data Protection Suite of software products along with the hardware platform to run them. The EMC Data Domain software included within the IDPA appliance will replicate backup catalogs, metadata, and backup data between each site. This ensures that the backed-up data as well as the metadata and catalogs from both locations are available in either location. For example, assuming catastrophic loss of one site, the remaining IDPA would have a copy of all backup data, catalogs, and metadata which could be used to restore either site from the last backup or a previous restore point. IDPA also supports a single management console for both appliances which can assist with restoring data in either location from either IDPA appliance.</p>

	<p>Your DPS solution should maintain high availability from a DR perspective during failover/failback scenarios. Describe how you will meet or exceed this specification with your solution.</p>
4.2.1.5	<p>Advizex Response: 100% Comply</p> <p>Dell EMC IDPA operating from both locations ensures the ability to backup and restore data, access backup catalogs, and metadata from either location in the event of a disaster or fail-over scenario. In addition, IDPA with its global data reduction capabilities will not be adversely affected if the source of the data being protected moves in a fail-over event like other backup applications. The</p>

	IDPA at DR can also be made primary for the production backup jobs from either global console. In the event of an extended failover event, IDPA will continue to protect the local workload and is also capable as provided to support the fail-over workload at DR for an extended period.
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4.2.1.6 4.2.1.6.1	<p>4.2.1.6. Describe in detail how your solution will meet the Lottery's Point in Time Recovery and Recovery Point Objectives:</p> <p>4.2.1.6.1 The proposed DPS solution should include software licensing for each WVL data center that provides point-in-time recovery for all virtual guests via journal-based, bi-directional VM replication. The Recovery Point Objective for replication should be 15 minutes or less. This replication software should include features designed to: reduce RTO (including DR testing/validation) and automate fail-over/fail-back (including automation processes for IP address changes and DNS updates). This point in time recovery solution should include licenses for (and the ability to) establish at least five (5) consistency groups, which in a failover event maintain application consistency both per group and per virtual machine while having identical RPOs. The product should also provide any point-in-time recovery per VM.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution is licensed for Dell EMC RecoverPoint for Virtual Machines (RPVM). RPVM provides point-in-time DVR-style recovery of virtual machines, volumes, or consistency groups containing multiple objects.</p> <p>RPVM:</p> <ul style="list-style-type: none"> • Uses bidirectional journal replication • Is efficient enough to provide 15 minute or less RPO for all VMs • Features for DR testing, validation, as well as, fail-over, and fail-back automation • Supports scripting to automate other custom actions such as IP changes, DNS, MAC cloning, or other changes that may be required in a DR scenario.

	<ul style="list-style-type: none"> • Enables the capture of changes made at the DR site in the event of a DR event so that new data can be replicated back to the Production site when the DR event is over • Supports up to 64 consistency groups • Supports consistency group sets to ensure consistent recovery of interdependent applications
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4.2.1.6 4.2.1.6.2	<p>4.2.1.6. Describe in detail how your solution will meet the Lottery's Point in Time Recovery and Recovery Point Objectives:</p> <p>4.2.1.6.2 Your proposed DPS solution should simultaneously support standard applications, platforms, and protocols with application consistent protection (Backups that restore a useable platform), e.g. MS Exchange, MSSQL, System State and SharePoint. This is related to structured data backups and restore. Describe how you will meet or exceed this specification with your solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell EMC IDPA solution fully supports application-consistent backup by leveraging VMware image-level backup capability and vSphere snapshots, the VM state, as well as data in memory, and in-transaction data being backed up backed up.</p> <p>The IDPA solution is able to leverage VMware vStorage API for Data Protection (VADP) as well as Microsoft's Volume shadow copy service (VSS)/ This delivers fully-consistent application backups for any supported Windows server, including Exchange, SharePoint, and MSSQL.</p> <p>The IDPA solution included also includes DDBOOST for Enterprise Applications, this allows SQL DBA's to back up to IDPA from Native MSSQL tools with source side data reduction and policies set by IDPA administrators. This prevents DBA's from consuming valuable space on file shares, local devices or SQL VM's with full uncompressed backups of databases prior to changes. DDBOOST also accelerates and optimizes Exchange backups with source side Dedupe and optimized data path to IDPA.</p>

4.2.1.7	<p>4.2.1.7. The vendor provided DPS solution should include data reduction software capable of logically storing at least 1.56PB (uncompressed) of backup data on the included data protection storage, without need of additional licenses or hardware. The Lottery currently experiences 26:1 data reduction. The proposed DPS solution would require 60TB of physical storage to backup 1.56PB of data with that ratio (26:1).</p> <p>Provide the average compression rate for your DPS solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA solution includes the latest software-defined version of EMC Data Domain, the industry leader in data reduction and purpose-built data protection storage.</p> <p>IDPA's integrated Data Domain is the only product available that will be able to match and exceed your current 26:1 data reduction performance (currently on Data Domain).</p> <p>Other competitive solutions with mismatched Software and storage hardware would require tremendous capacity to deliver the WVL's 1.56PB of logical capacity while IDPA is able to deliver this within 2U as configured in our proposal.</p> <p>In addition, if WVL needs to expand – IDPA already includes an additional 624TB of logical capacity in the appliance, 2.184PB total, that can be enabled with a simple license key. <u>No hardware installations required.</u></p> <p>The Average Data Reduction savings for Data Domain achieved with internal Dell testing and customer telemetry data is 65:1 deduplication ratio.</p> <p>Advizex expects that WVL will experience between 26:1 to 50:1 with IDPA depending on retention periods and future workloads.</p>

4.2.1.8	<p>Your DPS solution should meet the Lottery's requirements for data compression of backups without additional licenses or hardware additions. Describe how you will meet or exceed this specification with your solution.</p>
	<p>Advizex Response: 100% Comply</p>

	<p>The Advizex recommended IDPA solution includes the latest software-defined version of EMC Data Domain, the industry leader in data reduction and purpose-built data protection storage. Data Deduplication and Compression of backups is included and built into IDPA. No additional licenses are required to meet WVL's objective of 1.56PB of uncompressed logical storage. In the unlikely event that WVL does need to add backup capacity more than the provided licensing, additional usable capacity can be licensed in increments of 12TB usable (after data reduction) per location. Each 60TB IDPA includes an additional 36TB of usable capacity in the appliance that is ready to license if needed.</p>
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4.2.1.9	Describe in detail how much DPS storage is proposed specifically for backup and data replication.
	<p>Advizex Response: Each IDPA DP4400 is provided with 60TB of usable data protection storage and licensing prior to data reduction. An additional 36TB of physical backup capacity is installed, but not licensed. This allows for fast activation without physical installation, if needed, in the future. It is expected that each 60TB IDPA will deliver over 1.5PB of logical capacity when accounting for data reduction.</p>

4.2.1.10	Your HCI solution should handle the addition or replacing of computer storage functions without any disruptive impact to production. Describe how you will meet or exceed this specification with your solution.
	<p>Advizex Response: 100% Comply</p> <p>Advizex recommends the VxRail leveraged VMware vSphere hypervisor, vCenter management, vSAN Software defined storage (SDS) and VMotion. It supports lifecycle refresh and capacity adds without any disruption to production.</p> <p>The Advizex recommended solution leverages a 6-node cluster, per location, and supports (2) two simultaneous failures that include up to 2 complete nodes.</p> <p>This allows for a node to be placed in maintenance mode, removed from the cluster, or an unplanned node failure without any loss of productivity.</p>

	<p>VxRail manager fully automates updates, cluster adds, cluster node retirement, and even new model VxRail appliances to be added to the cluster allowing your next hardware refresh to occur with no downtime.</p> <p>VxRail doesn't require storage pinning or storage only nodes to accomplish this – rather every node is able to contribute to vSphere and vSAN equally. This maximizes availability and minimizes management for WVL.</p> <p>Each VxRail node in the cluster includes one storage group containing (4) four 3.84TB capacity drives. Future expansion opportunities include adding an additional storage group to each node (doubling effective capacity) or by adding one or more nodes containing storage to contribute to the performance and capacity of the cluster. Because of the cluster design and resiliency features built into Vsphere and VSAN – these expansions can be completed without scheduled downtime or impact to production.</p>
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4.2.1.11	Describe in detail how DR is handled on the HCI solution during a site-to-site failover and failback.
	<p>Advizex Response:</p> <p>The Advizex recommended solution is licensed for Dell EMC RecoverPoint for Virtual Machines (RPVM). RPVM provides point-in-time DVR-style recovery of virtual machines, volumes, or consistency groups containing multiple objects. RPVM handles the replication, automation, and fail-over process for VM workloads from one VxRail Cluster to the other. Each VxRail cluster provided in the Advizex response is equal in capacity and performance, and either is able to run the entire production workload in a fail-over scenario. Failback with RPVM also includes the ability to roll forward changes that may have been made while running from the DR site.</p>

4.2.1.12	<p>Your vendor provided HCI solution software should: (1) add storage capacity and compute both simply and non-disruptively and (2) once added, automatically rebalances resources and workloads across the cluster, creating a single pool of resources. Describe how you will meet or exceed this specification with your solution.</p>
	<p>Advizex Response:</p> <p>100% Comply</p>

	<p>The Advizex recommended VxRail solution is designed for life-cycle management from the start. When a new node or even new model nodes are connected into the VxRail cluster, VxRail manager will detect the new node and prompt the admin to add the new node to the existing cluster.</p> <p>The VxRail manager will deploy the same consistent software bundle running in the cluster to the new node fully automated. Once the node has been configured by VxRail manager, the storage pool will be expanded, CPU resources will be expanded, and RAM will be expanded. VMware will then be able to re-balance the guests and workloads across the new and existing nodes. This process incrementally adds to the single pool of resources as required by WVL.</p> <p>Using VMotion to migrate the workloads between nodes ensures that these operations all occur non-disruptively.</p>
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	<p>Your HCI solution should be capable of being managed from a single pane of glass (dashboard). Describe how you will meet or exceed this specification with your solution.</p>
4.2.1.13	<p>Advizex Response: 100% Comply</p> <p>The VxRail HCI solution Advizex is recommending and providing is the only HCI solution on the market that is jointly engineered, marketed, and supported by VMware with a major hardware manufacturer. One of the many benefits of this partnership is that VMware is the developer and integrator of the VxRail management tools. All administration is performed from a single console, and all of the day-to-day including storage policies, provisioning, and health is seamlessly integrated into standard Vcenter tools.</p>

	<p>Describe the maximum HCI storage capacity of your proposed solution before the need to add additional nodes.</p>
4.2.1.14	<p>Advizex Response: The Advizex recommended and provided VxRail solution includes (1) one storage group per node for a total of (6)six per cluster. Each storage group includes (4) four 3.84TB Flash Drives and (1)one 800GB cache acceleration drive. It is best practice to install equal sized storage groups within an existing cluster because it increases storage efficiency without adding nodes. Assuming WVL</p>

	continues to follow best practices, each VxRail cluster provided in the Advizex response will deliver a maximum of 74TB of addressable, available, usable capacity assuming (2) two nodes are down. As delivered and configured, 37TB is available per cluster with (2) two nodes offline.
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4.2.1.15	Describe the HCI solutions maximum storage capacity with the maximum # of nodes installed.
	<p>Advizex Response:</p> <p>The Advizex recommended and provided VxRail solution includes (1) one storage group per node for a total of (6) six per cluster. Each storage group includes (4) four 3.84TB Flash Drives and (1) one 800GB cache acceleration drive. It is best practice to install equal sized storage groups within an existing cluster because it increases storage efficiency without adding nodes.</p> <p>If WVL decided to scale-out the cluster to its max size, assuming these drive types and node types remained the same, each cluster would deliver 1,333TB of addressable, available, usable capacity assuming two nodes were unavailable. Different model nodes with more capacity slots and/or larger drives can achieve up to 161TB per node. With the large variety of disks, node models, and data distribution methods available, Advizex and Dell EMC will be able to recommend the most preferred capacity expansion options for WVL even to Petabyte scale while retaining WVL's initial investment.</p>

4.2.1.16	Describe how total bandwidth and or total compute is affected when HCI storage is increased or decreased.
	<p>Advizex Response:</p> <p>The Advizex recommended and provided solution includes (6) six active nodes for compute and storage capacity/performance. It is recommended to reserve some bandwidth/compute/RAM capacity to safely perform maintenance without disruption or to maintain performance and availability in the event of an unscheduled disruption. The Advizex HCI solution is sized with the assumption that 4 nodes per location will be able to run the entire workload. In this case, the 6-node solution is 50% over provisioned and each additional node contributes 16.6% of RAM/storage/CPU to the total pool. Another way to quantify the contribution that each node makes equally to the cluster is by assuming each node offers 25% of the current workload capacity. Additional</p>

	nodes with the same specifications would add bandwidth, storage, RAM, and total compute matching the base nodes on a 1-to-1 basis.
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4.2.1.17	Describe the advantages your solution provides in regarding to adding HCI storage.
	<p>Advizex Response:</p> <p>The Advizex recommended and provided HCI solution provides VMware designed and integrated VSAN software for software defined storage. VSAN with VxRail supports data capacity expansion on a disk group or node basis. WVL can double the required capacity by simply adding disks to the base nodes or can increase to massive capacities by adding nodes each containing capacity and cache media. The VSAN scaling design takes advantage of increased bandwidth, increased cache, and IOPS as nodes or disk groups are added. Unlike other HCI designs dependent on paravirtualization and legacy NFS mounts on storage nodes, VSAN on VxRail gains performance as it scales naturally. VSAN is a native ESXi kernel module that has the most direct, highest performance connection between the storage and the Vsphere host. In addition, VxRail also supports direct FC to attach which can be used to extend storage capability beyond VSAN if needed in the future.</p>

4.2.1.18	Describe how redundancy is impacted (i.e. additional controllers, interfaces, etc.) when storage is added to your HCI solution.
	<p>Advizex Response:</p> <p>Redundancy and fault tolerance on VxRail/VSAN is controlled by storage policies applied at the storage group or VM level. Adding additional nodes does not improve or reduce the redundancy or fault tolerance alone. If more fault tolerance is desired, WVL simply changes the data protection policy for the desired VM's or storage objects. Additional nodes or drives can be added to increase available storage if these more robust policies are desired in the future. The major advantage of this is that WVL can specify more fault tolerant storage policies for a group of VM's while potentially saving raw storage capacity by lowering fault tolerance for test or development VM's. All HCI specifications in this Advizex response assume Fault tolerance of (2) two failures while all storage remains available, usable, and writable.</p>

4.2.1.19	Your proposed HCI solution should scale up or scale-out. Please describe how your HCI Solution either scales up or scales out
	<p>Advizex Response: 100% Comply with both requirements.</p> <p>The Advizex recommended and included HCI solution is primarily a scale-out solution. However, it is possible and supported to increase RAM, or storage capacity within the 6 base nodes (scale up) prior to scaling out to additional nodes. It is also possible to retire and replace existing nodes non-disruptively with new nodes of higher capacity or performance. Either scale-up or scale-out expansions can be performed non-disruptively. In order to scale-out VxRail, nodes can be added in increments of (1) one and will add CPU, RAM, and storage equal to the total pool of resources.</p>

4.2.1.20	Describe in detail how your HCI solution would be decommissioned and migrated to new hardware.
	<p>Advizex Response: The Advizex recommended Dell EMC VxRail solution includes VxRail manager software that is tightly integrated into vSphere.</p> <p>To decommission cluster nodes and migrate data to new VxRail hardware, Dell EMC would install the new nodes, power them up and connect them to WVL's TOR switches in the current VxRail cluster. Then, VxRail manager is used to discover the new nodes and automatically add them to the cluster. Once these nodes are successfully added to the cluster, Dell EMC would Vmotion the workloads to the new nodes and decommission each deprecated node in VxRail manager. As the nodes are decommissioned in VxRail manager, VxRail VSAN will seamlessly migrate the data, policies, configuration, and metadata to the new nodes and evacuate the deprecated ones. Lifecycle management is a huge advantage of VxRail and the VSAN architecture is best positioned for fast, automated migration of storage between the old and new nodes.</p>

4.2.1.21	Your proposed HCI solution should handle the addition or replacement of nodes that are not of the same generation as the original hardware. Please describe in detail how this is accomplished.
	<p>Advizex Response: 100% Comply</p>

	<p>VxRail software is delivered as a unified release of common software, drivers, and firmware across multiple generations and models of VxRail nodes. Because of VxRail's unique co-development between Dell and VMware, regular unified VxRail release updates would ensure that older generation hardware is updated and prepared to support newer generation hardware concurrently. For example, the most recent release of VxRail software "7.0.300" supports the last (3) three hardware revisions concurrently as of this response date. In order to add new generation nodes to an existing cluster, WVL would just need to insure that the new nodes are supported by the installed release and then add them to the cluster.</p>
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4.2.1.22	<p>Your proposed HCI solution's software should provide Quality of Service on a per-VM basis. Describe how you will meet or exceed this specification with your solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended VxRail solution uses VMware vSAN and offers a Storage Policy-based management (SPBM) rules.</p> <p>The storage policy is applied at the vSAN object level, as a result, QOS or storage policies can be applied at the VMDK, VM, or vSAN datastore level.</p> <p>In fact, multiple QOS policies can even be applied to the same VM.</p> <p>These vSAN QOS policies will allow WVL to prioritize critical business applications, while "noisy neighbor" processes and VM's can be limited and controlled. The granular and simple consistency of these policies allow WVL to avoid complex data and capacity management of diverse storage pools and only apply rules where needed at the VMDK or VM level.</p>

4.2.1.23	<p>Your proposed HCI solution software should provide Storage-policy based management on a per-VM basis. Describe how you will meet or exceed this specification with your solution.</p>
	<p>Advizex Response: 100% Comply</p>

	<p>The Advizex recommended VxRail solution uses VMware vSAN and offers a Storage Policy-based management (SPBM) rules. These rules fully support policies at VM level as required by WVL.</p> <p>The storage policy is applied at the vSAN object level, as a result, QOS or storage policies can be applied at the VMDK, VM, or vSAN datastore level.</p> <p>VSAN storage policies on a per-VM basis permit unique data protection policies, which can be failures to tolerate, disk stripe counts, cache reservations, and provisioning styles.</p> <p>VSAN exceeds the requirements as it can blend multiple policies added on any vSAN object – providing the most flexibility in tuning storage polices for WVL applications.</p>
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	<p>Your proposed HCI solution software should provide Storage-policy based management on storage groups and/or storage pools. Describe how you will meet or exceed this specification with your solution.</p>
4.2.1.24	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended VxRail solution uses VMware vSAN and offers a Storage Policy-based management (SPBM) rules.</p> <p>The storage policy is applied at the vSAN object level, as a result, QOS or storage policies can be applied at the VMDK, VM, or vSAN datastore/pool level.</p> <p>VSAN storage policies on a storage group basis permit unique data protection policies, which can be failures to tolerate, disk stripe counts, cache reservations, and provisioning styles.</p> <p>VSAN exceeds the requirements as it can blend multiple policies added on any vSAN object – providing the most flexibility in tuning storage polices for WVL applications.</p>

4.2.1.25	Describe in detail what is required to setup the TOR switch to support the HCI Solution.
	<p>Advizex Response:</p> <p>The Advizex recommended and provided HCI solution includes (2) two 25Gb interfaces per node. The provided TOR switches support direct attach 25Gb cables from each node and support VLAN segregation to keep VSAN network traffic off WVL's production core routers and switches. Dell EMC deployment engineers will create a custom switch configuration that applies best practice configuration standards that improve performance, capacity expansion, and supportability based on the needs of WVL. The Advizex recommended solution assumes that the HCI, UDS, and DPS solutions will all share the TOR interfaces to optimize data protection and solution performance.</p>

4.2.1.26	Your proposed HCI solution should maintain high availability from a DR perspective during a failover and failback. Describe how you will meet or exceed this specification with your solution.
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended solution is licensed for Dell EMC RecoverPoint for Virtual Machines (RPVM). RPVM provides point-in-time DVR-style recovery of virtual machines, volumes, or consistency groups containing multiple objects. RPVM handles the replication, automation, and fail-over process for VM workloads from one VxRail Cluster to the other. Each VxRail cluster provided in the Advizex response is equal in capacity and performance, and either can run the entire production workload in a fail-over scenario. This means that both clusters support failures to tolerate of (2) two which includes complete nodes. RPVM also includes failback capabilities to retain and commit data changed in DR during a failover so that no new or old data is lost.</p>

4.2.1.27	Your proposed solution should allocate Storage for use in this UDS environment. Please describe this process in detail.
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended and provided UDS solution is based on Dell EMC Powerscale. Powerscale (Isilon) is a massively scalable scale-out solution that</p>

	includes storage capacity, client capacity, RAM, and CPU to run the cluster software features. The UDS storage in the Powerscale F200 is dedicated to UDS business use cases such as WORM storage for document imaging and departmental and user document shares. The storage policies included with our solution allow WVL a wide variety of storage allocations that best meet business needs. This allows WVL to avoid consuming valuable VMware volume capacity for windows file server shares.
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4.2.1.28	<p>Your UDS storage should have the capability to be allocated to support 2 independent application Filespaces (Document Imaging and File system storage) and those Filespaces should be able to be managed independently. Describe how your solution will meet or exceed the two specifications referenced below.</p> <p>Advizex Response: 100% Comply</p> <p>The recommended Powerscale cluster includes software for and to completely support multiple file spaces. These file spaces can support unique networks, unique authentication mechanisms, unique directory services such as AD, unique users and groups, unique file system features, unique policies, or unique owners such as in a multi-tenant management atmosphere. Although not needed in this use case, Powerscale is often offered as a multi-tenant UDS storage service for hybrid cloud service providers. Powerscale fully supports the two required filesystems today with independent management or could support many more as delivered for future needs with no extra licensing or hardware costs. It would even be possible to have specific filesystems managed or used by external entities securely.</p>

4.2.1.28.1	<p>Describe in detail how your UDS solution provides hardware level and/or Storage Level redundancies in an environment with multiple filesystems.</p> <p>Advizex Response: 100% Comply</p> <p>Powerscale provides hardware and storage level redundancies based on policy by using FEC or forward error correction. Because every file, folder or object is protected by FEC as soon as it is written, the data protection is not dependent on legacy RAID, specialized hardware or the file systems or access zones configured. This also means that WVL does not have to allocate and reserve</p>

	<p>space for multiple filesystems – as the policy driven architecture doesn't consume storage for RAID until each file is written. And SmartQuotas are available to reserve space if needed. For example – if a file is written to the Powerscale by an imaging server – Powerscale by policy may protect the data differently than another type of workload. These policies can be used to automatically apply extra redundancy protections, WORM policies, or unique quota policies to ensure capacity is always available for critical systems such as document imaging. The sizing in the Advizex response is assuming a FEC policy that ensures complete data availability losing up to two drives or one complete node. By default, Powerscale chooses a data protection algorithm that ensures a MTDDL (Mean Time to Data Loss) of 5,000 years or greater, however more redundancy can be added via policy with a small loss in usable capacity if needed.</p>
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	<p>Explain how your solution has the ability to replicate all data bi-directionally while maintaining Worm capability on the UDS system.</p>
4.2.1.28.2	<p>Advizex Response: 100% Comply</p> <p>The Powerscale solution recommended and provided by Advizex includes native replication technology that is policy aware. Since WORM policies, data protection policies, security policies and others are applied to metadata as data is written, these policies replicate with the data anytime the data moves throughout the cluster or even to a native remote cluster.</p>

	<p>Your proposed UDS software solution should add or replace nodes non-disruptively for lifecycle management. Non-disruptively means all data is accessible, writable, usable, and available prior, during, and after the lifecycle process. Describe how your solution will meet or exceed the two specifications referenced below.</p>
4.2.1.29	<p>Advizex Response: 100% Comply</p> <p>Advizex recommended and provided PowerScale is designed to be highly available during software upgrades, node refreshes, node failures, or node additions:</p>

	<ul style="list-style-type: none"> • When nodes are added, the purpose-built native file services operating system (OneFS) will expand the cluster capacity and redistribute the data non-disruptively among all active nodes. • When nodes are scheduled for refresh, OneFS will initiate the smartfail process which evacuates all data from the node and distributes to remaining nodes non-disruptively and then removes the node from the cluster seamlessly. • In the event of an unexpected failure, OneFS leverages erasure coding protection to protect the data and provide availability with protection policies designed to meet WVL's unique availability requirements. • Because of the unique UDS data protection policies, OneFS will also automatically re-protect stored data even if a node remains offline. The policy applies to the data, not the nodes – so changes in node counts do not adversely affect the data protection policies and will be honored to meet the protection policy. These policies live alongside and are replicated and distributed with the data ensuring that additions or replacements continue to protect the data as intended.
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4.2.1.30	Describe how your UDS solution handles adding nodes and how this impacts ease of use, deployment, High Availability, or any other significant functions or features.
	<p>Advizex Response:</p> <p>The Advizex recommended and provided Powerscale UDS solution is designed to seamlessly support adding nodes to grow each namespace automatically. Unlike most architectures that scale by simply adding disks or disk enclosures, Powerscale is a true scale-out architecture that gains storage, cache, ram, network performance, and CPU with each node that it added. When new nodes are added – the OneFS operating system automatically revises the data protection and distribution methods to balance out the cluster resources equitably. This ensures that all the new resources are in use and available. Another benefit of OneFS is that adding nodes improves high availability, increases MTDL, and unlocks higher levels of fault tolerance. If the new nodes precede a replacement, OneFS will evacuate sessions, data, and network entries to smartfail the node and remove it from the cluster without any downtime. The management of the cluster is unaffected during the process, all nodes are managed from the OneFS console even as additional nodes are added.</p>

4.2.1.31	Describe how bandwidth and compute is impacted when UDS storage capacity is added.
	Advizex Response: Powerscale is a true scale-out architecture that gains storage, cache, ram, network performance, and CPU with each node that it added. When new nodes are added – the OneFS operating system automatically revises the data protection, load balancing, and data distribution methods to balance out the cluster resources equitably. This ensures that all the new resources are in use and available. Adding nodes to Powerscale increases performance as well as capacity, unlike other architectures which depend on a limited number of controllers and only scale disk.

4.2.1.32	Describe the process of adding UDS storage capacity to your solution.
	Advizex Response: The process to add capacity to Powerscale is by adding nodes. This process starts with installing the node(s) physically, cable, and power on. OneFS will detect the new node and offer to configure and add the node to the cluster. Once initiated, OneFS will configure the node to match the OneFS software version and prepare the node to join. Then OneFS will add the resources and automatically revise the data protection and distribution methods to balance out the cluster resources equitably. This ensures that all the new resources are in use and available. Adding nodes to Powerscale increases performance as well as capacity, unlike other architectures which depend on a limited number of controllers and only scale disk.

4.2.1.33	Describe how redundancy is impacted (i.e. additional controllers, interfaces, etc.) when storage is added to your UDS solution.
	Advizex Response: PowerScale is a true scale-out solution. Each node added for capacity brings controller resources, client serving CPU/RAM resources, global cache and metadata capacity increases, storage increases, and network interface increases. Every node added improves performance, availability, and capacity. In addition, as needs change archive nodes or faster all flash nodes can be added as tiers that alter the ratio of performance vs capacity for future use cases. All these

	additions and expansions happen without scheduled downtime. Most customers do them during business hours.
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4.2.1.34	Describe what will occur if a controller in a UDS node fails. Please also describe how your solution minimizes the impact of a single UDS node failover.
	<p>Advizex Response:</p> <p>The Powerscale solution uses FEC or forward error correction to protect data. That is how multiple types of fault tolerance are provided within the same namespace without requiring rigid storage or disk groups. The default data protection policy is designed to deliver 5,000 years of MTDL (Mean time to data loss). In this (4) four node configuration, the default config is +2d:1n. FEC adds and distributes parity bits each time a file is written allowing all data to remain available with up to two failed drives or one complete node. (+2:1n) With Powerscale and the appropriate node count, the fault tolerance can even be increased for super critical data to survive failure of (4) four drives or (2) two nodes, or even (3) three, or (1) one node and (1) one drive. All the parity is written per file so these changes can be made after provisioning or even applied as policy to existing data without any formatting or unavailability.</p> <ul style="list-style-type: none"> Because of the unique UDS data protection policies, OneFS will also automatically re-protect stored data even if a node remains offline. The policy applies to the data, not the nodes – so changes in node counts do not adversely affect the data protection policies and will be honored to meet the protection policy. These policies live alongside and are replicated and distributed with the data ensuring that additions or replacements continue to protect the data as intended.

4.2.1.35	Describe the process of adding UDS nodes either local or remote (singles or pairs etc.) to support failover.
	<p>Advizex Response:</p> <p>Powerscale F200 nodes can be added in single node increments after the initial minimum of 3 nodes. Remote replicas can reside on equal capacity/performance nodes or even different models with different performance and capacities. Failover can be orchestrated and automated with the included Superna DR software bundle in any of these scenarios.</p>

	The F200 nodes provided are the same in DR and Production, so as recommended, the process is the same. It is possible for WVL to add single or multiple nodes to each site independently – or even add a different level of performance tier to each or one site in the future. The tiering software to do this is included – but the alternate hardware tiers would be an additional purchase.
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4.2.1.36	Your proposed UDS solution should scale up or scale-out. Please describe how your HCI Solution either scales up or scales out.
	<p>Advizex Response: 100% Comply</p> <p>PowerScale is a true scale-out solution. Each node brings controller resources, client serving CPU/RAM resources, global cache and metadata capacity increases, storage increases, and network interface increases. Every node added improves performance, availability, and capacity. In addition, as needs change archive nodes or faster all flash nodes can be added as tiers that alter the ratio of performance vs capacity for future use cases. All these additions and expansions happen without scheduled downtime. Most customers do them during business hours.</p>

4.2.1.37	Describe in detail (1) the architecture of the UDS storage and (2) the number of controllers in the storage devices and how the data is shared internally between those controllers.
	<p>Advizex Response: The Powerscale F200 architecture as recommended and provided is a four (4) node cluster. Each node in the cluster has four 3.84TB flash drives, one controller, two 25Gb client access (front-end) ports, and two 25Gb storage fabric (back-end) ports. OneFS is the storage operating system running on all nodes and each node establishes redundant connections on the back-end and front-end interfaces. The back-end network is used for the nodes to share metadata, data, and commit protected data with FEC to each node and disk in the cluster. Powerscale does not use a legacy controller architecture with internal paths, every node joins the back-end mesh network and contributes equally depending on configuration and policy. In a 4 node cluster, there are 4 active “controllers” and in a 6 node, there are 6. Performance, data paths, front-end and back-end bandwidth as well as client capacity increase with each node(controller).</p>

4.2.1.38	Describe in detail (1) how your UDS solution's fault tolerance is handled from a Node/Hardware redundancy level and (2) which internal components if lost or degraded will initiate failover.
	<p>Advizex Response:</p> <p>Powerscale uses data protection policies and Forward Error Correction (FEC) to protect all data written to the cluster. The scale-out design provided includes 4 nodes with data and compute capacity distributed equally through the cluster. The default data protection method recommended allows for (2) drive failures or (1) node failure per cluster without data unavailability. In the event of an acute drive failure, the FEC parity is used to serve the data without interruption. Once this failure occurs, OneFS will automatically work to re-protect the existing data among the remaining disks/nodes to ensure that the data is protected as policy dictates. In the event of drive errors indicating potential failure, OneFS will automatically quarantine and begin to evacuate data and redistribute to prevent protection policies from being violated prior to drive failure. These same policies and procedures apply to a single node failure. In the event of catastrophic loss – Superna DR software provided will be able to fail over to DR automatically from the replicated copies or applicable snapshots.</p>

4.2.1.39	Describe in detail the processes of adding storage to the UDS solution to add capacity to the existing platform including (1) adding storage to an existing Storage node and (2) applying the storage to an existing pool from start to finish including switch connectivity.
	<p>Advizex Response:</p> <p>Powerscale nodes are always provided with capacity and cache drives, so adding storage to an existing node is not possible. With the scale-out architecture, nodes with storage are added to the cluster and automatically expand cluster resources. To add an additional F200 node, the node would be physically mounted into the rack, connected to power cables, and two SFP28 cables would be connected to the Back-End switch fabric, and two SFP28 cables would be connected to the TOR (Front-End) switch. Once the node is powered and cabled, the node will identify itself as an unconfigured node. The admin would log into OneFS cluster management and choose hardware configuration. New available nodes will show and the admin will tell the node to join the cluster. Once this process is complete, the new node will be in the cluster and will begin to redistribute and share the workload. Once the node is configured the pool of resources will be expanded – storage capacity, performance, client capacity, network throughput, will increase across the cluster.</p>

4.2.1.40	Describe the configuration process when setting up the top of rack switch for the UDS Solution.
	Advizex Response: Most of the TOR switch configuration for the Powerscale solution is dependent on WVL's network design and VLAN utilization. Two 25GbE SFP28 interfaces per node are available for client side connections to the Powerscale cluster. Link aggregation (802.1AX) may be used to combine interfaces on each node, but not between nodes- it is not necessary, and can be used if transparent interface failover is desired. The majority of Powerscale network configuration is not on the TOR switches, but largely fall with IP pool assignment, DNS configuration, Active Directory integration, and failover settings.

4.2.1.41	Your UDS solution should be capable of being managed from a single pane of glass (dashboard). Describe how you will meet or exceed this specification with your solution.
	Advizex Response: 100% Comply Powerscale includes OneFS, DataIQ, and Cloud IQ. OneFS is the native Powerscale detail element manager, DataIQ is a detailed Data analysis tool, and CloudIQ is an AI OPS cloud based single pane of glass that can be used to manage Dell EMC Powerscale, VxRail, IDPA, Servers, and storage networks. CloudIQ extends from the cloud to web browsers anywhere and mobile apps with remote notification and health status.

4.2.1.42	Describe your transitional management as it pertains to the refresh of UDS hardware. Describe how each component of the solution allows for transitional migration.
	Advizex Response: Powerscale UDS hardware refreshes use the scale-out architecture to ensure there is no user driven transitional migration during lifecycle refresh activities. The process begins with new nodes being added to the existing cluster, then once the data has been redistributed, an admin would log into OneFS and request that the legacy nodes smartfail themselves. This automated lifecycle activity causes all data to be evacuated and redistributed to only the new nodes

	while maintaining the existing cluster features, software, configurations. The new nodes will automatically assume ownership of the cluster and cluster management continues during the process. There is no visible transition of management that's visible to the admin or any end-users of the solution.
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4.2.1.43	Your UDS solution should accommodate replacing older model nodes with new models when necessary (futureproofing). Describe how you will meet or exceed this specification with your solution.
	<p>Advizex Response: 100% Comply</p> <p>The Powerscale UDS solution uses its scale-out architecture to support all node adds and lifecycle. New nodes are seamlessly added to the cluster by connecting cables and powering them on. The node and the cluster will recognize the new node(s) and offer to join the cluster. Once new nodes are joined to the cluster, old nodes may be removed with smartfail. Smartfail automatically evacuates the data from old nodes and moves it to the new nodes. During this process, the data remains protected, available, writable during the process. If the goal is expansion – old and new nodes even spanning hardware generations may remain and function as pools in a cohesive cluster. The OneFS software that makes all this possible supports a wide range of hardware generations with each release. That software commonality is how multiple generations may work together at the same time.</p>

4.2.1.44	Your UDS solution should provide data integrity and replication bi-directionally in a site-to-site design. Describe how you will meet or exceed this specification with your solution.
	<p>Advizex Response: 100% Comply</p> <p>The Powerscale UDS solution includes SyncIQ replication software. SyncIQ provides powerful encrypted replication, push button failover/failback, and seamless failover and failback of compliance data (WORM) or standard data. Replication is policy based, allowing data types, folders, to have different snapshot or replication intervals. The included Superna Eyeglass software also replicates configuration data between clusters to enhance the automated failover capabilities.</p>

4.2.1.45	<p>Your UDS Disaster Recovery should be based on a site-to-site failover and failback design. Describe how you will meet or exceed this specification with your solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Powerscale UDS solution includes SyncIQ and Superna Eyeglass DR software. SyncIQ replicates all data between the Charleston and Bridgeport cluster, enables Powerscale failover, and Superna Eyeglass DR enables additional automation and configuration replication between the clusters to add automation and streamline failover, recovery, and failback. Failback is also able to capture changes made while running from DR and replicate those changes back to production when applicable.</p>

4.2.1.46a	<p>Your proposed UDS solution should provide Ransomware Protection and Auditing/Storage Management capabilities. Please describe in detail how your proposed UDS solution meets or exceeds this specification. Examples include but are not limited to:</p> <ul style="list-style-type: none"> Advanced Auditing — software for auditing purposes that includes scheduled reporting, searching, pro-active data protection with automated responses, and interactive user interfaces for viewing audit information.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended UDS solution includes advanced auditing provided by Superna Easy Audit for PowerScale. Easy Auditor is a powerful auditing platform native to PowerScale with custom triggers, continuous search results, configurable actions, wiretap real time auditing, data loss prevention, and AI powered Robot Audit which automates event creation and report validation. Superna is the only solution available that can audit SMB, NFS, and HDFS. Easy audit is completely integrated with PowerScale, leveraging PowerScale for compute, storage, and integrated snapshot/replication features of PowerScale.</p>

	<p>Your proposed UDS solution should provide Ransomware Protection and Auditing/Storage Management capabilities. Please describe in detail how your proposed UDS solution meets or exceeds this specification. Examples include but are not limited to:</p> <ul style="list-style-type: none"> • Ransomware Prevention — included software to automate the incident response activity in regard to ransomware on a file system. The software feature should provide the capability to actively monitor user behavior analytics, and will detect abnormal file access behavior to protect the data. The ransomware prevention feature should include the capability to take automatic snapshots of data in response to abnormal behavior, as well as automatically denying the user who initiated the abnormal behavior until verified and unlocked by an admin.
4.2.1.46b	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended UDS solution includes Ransomware Prevention provided by Superna Ransomware Defender. Superna Ransomware defender (SRD) leverages advanced automated and integrated audit features and analytics to actively monitor and automatically respond to potential ransomware attacks. SRD will detect abnormal file access patterns, initiate native PowerScale snapshots, and disable the source user or machine to prevent further attack. This allows administrators to act and address the source before all data is encrypted or damaged. In addition, SRD now includes a managed banned list of over 2500 extensions, and expanded behavior detection analysis with honeypot and support for air-gapped PowerScale with 1 hour RPO.</p>

4.2.1.46c	<p>Your proposed UDS solution should provide Ransomware Protection and Auditing/Storage Management capabilities. Please describe in detail how your proposed UDS solution meets or exceeds this specification. Examples include but are not limited to:</p> <ul style="list-style-type: none"> • Storage monitoring — included software should include software capability to create quota policies with templates, provide granular disk usage reporting, quota management, and a help desk function to delegate locked and lost file assistance. The software should provide alerts to configurable email addresses notifying help desk staff of locked and lost files (i.e. user moves entire folder by mistake into another folder and believes it is lost).
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	<p>Advizex Response: <u>Storage Monitoring</u> 100% Comply</p> <p>The Advizex recommended solution includes Superna Cluster Storage Monitor (CSM) with AD integrated quota templates, granular cluster storage reports, AD integrated automatic and group enabled quota management, and help desk functions for file unlocking. Superna also offers a self-service user data recovery portal which enables version history, full content searching, and recovery of files from snapshots. In addition, Powerscale integrates with version history on Windows clients streamlining recovery and versioning for end user clients.</p>
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HCI/UDS/DPS/NETWORKING/PHYSICAL SERVERS SPECIFICATIONS

4.2.1.47 to 4.2.1.61 Hyperconverged Infrastructure Solution Specifications (HCI)

	<p>Vendor provided HCI solution should include integrated health monitoring components that regularly report component health, status, utilization, configuration information, to the OEM for support and repair enablement.</p>
4.2.1.47	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended HCI solution is supported by a wide variety of customer friendly integrated health monitoring and service enabling features.</p> <p>Dell EMC Support Assist Enterprise is used to send health information to Dell EMC for processing by Dell's AI/ML predictive maintenance and service tools. SupportAssist automatically detects issues, captures system state information, and initiates alerts and contact from Dell EMC.</p> <p>Dell EMC will also proactively open a case and notify WVL of and required dispatch of parts. SupportAssist also provides predictive issue detection, and reports recommendations to help with failure prevention.</p> <p>Also, the Advizex recommended Dell EMC HCI solution includes CloudIQ at no cost for storage products and VMware environments.</p> <p>CloudIQ combines monitoring, machine learning and predictive analytics so you can take quick action and simplify operations of your on-premises infrastructure</p>

	<p>and data protection in the cloud. CloudIQ supports a broad range of Dell Technologies products, including: PowerScale, IDPA, Power Edge Servers, and VxRail. For WVL, CloudIQ provides one common portal for UDS, HCI, DPS, servers, and networking for support enablement, capacity planning, and health. This health and capacity information is also shared with trusted partners, so Advizex is able to be notified of incidents generated by hardware or software as soon as WVL or Dell.</p> <p>CloudIQ consists of a hosted web application console and mobile app for support, capacity planning, health status, and configuration consistent best practices.</p>
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4.2.1.48	Vendor provided HCI solution should include defective media retention feature for 5 years (60 months).
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended VxRail solution includes sixty (60) months of defective media retention; keep your hard drive.</p>

4.2.1.49	Each HCI solution host should include a minimum of two (2) Hot-swap power supply units.
	<p>Advizex Response: 100% Comply</p> <p>Each Advizex recommended VxRail node includes two (2) Hot-swap power supplies, all required power cords, racking hardware, and a 1U rack mount chassis for the components.</p>

4.2.1.50	Vendor provided HCI solution should include a minimum of (6) six VMware compatible hosts per location. Each of these hosts should include all required components in order to host all of the existing and future VM guests for WV Lottery. These include but are not limited to CPU, RAM resources and access to storage on each host.
	Advizex Response:

	<p>100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes six (6) VMware compatible hosts per location. Each individual VxRail host provides all components required to host VM's including CPU, RAM, storage, cache, networking cards, Raid protected solid state boot devices, and required VSAN software.</p>
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	<p>Each HCI solution host should include a minimum of 96GB RAM running at 2933 MHz, and one Intel Gold CPU model 6248 or greater. If vendor chooses to offer an alternate CPU, the minimum core count per host is 20, and minimum clock speed is 2.5 GHz. Single socket hosts are preferred, but dual socket hosts are acceptable if the additional 12 sockets of VMware Vsphere Enterprise Plus software licensing and co-termed premium support are provided as a component of this RFP.</p>
4.2.1.51	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes 96GB of 3200Mhz RAM per host, and one Intel Gold CPU model 6248. Advizex's solution does not require any additional vSphere licensing and is perfectly sized for WVL's workload and license capabilities.</p>

	<p>Each HCI solution host should include a minimum of two (2) 25GbE SFP-28 compatible network interfaces.</p>
4.2.1.52	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes (2) SFP-28 25GbE network interfaces per node.</p>

	<p>Vendor provided HCI solution should include all-flash storage media for the purpose of hosting and optimizing the performance of WV Lottery VMware guests.</p>
4.2.1.53	<p>Advizex Response:</p>

	<p>100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes all-flash storage media for raid protected boot devices, cache and capacity drives for all VxRail nodes. All-Flash provides the highest performance and most robust data services when used with vSAN.</p>
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4.2.1.54	<p>Vendor provided HCI solution should include a minimum of 37TB of usable, persistent, all-flash, block storage capacity. This must be calculated after all overhead, fault tolerance methods, best practice slack space, and formatting losses have been accounted for in your solution.</p>
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes all-flash storage media that supports 37TB of usable persistent block storage capacity. This is worst case available capacity after all overhead, fault tolerance, slack space, and formatting losses have been accounted for. In addition, this capacity is available even with (2) two nodes and all their disks unavailable.</p>

4.2.1.55	<p>Vendor provided HCI solution should include the 37TB usable block storage capacity as defined above while configured with primary level of failures to tolerate configured as 2. This means any combination of two (2) entire hosts, storage nodes, drives, cache drives may be unavailable and the entire 37TB of block storage capacity must remain online, usable, and available for use.</p>
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes all-flash storage media that supports 37TB of usable persistent block storage capacity. This capacity is usable before compression, deduplication, or thin provisioning.</p> <p>This is worst case available capacity after all overhead, fault tolerance, slack space, and formatting losses have been accounted for. Using erasure coding and configured for FTT=2, all 37TB will be available, online, and usable with any</p>

	combination of two (2) entire hosts, storage nodes, drives, cache drives being unavailable.
4.2.1.56	<p>Vendor provided HCI solution should include software offering a full complement of data efficiency services, including deduplication, compression, and erasure coding as inline processes. This solution should support failure to tolerate of 1 and 2. Raid 5 and 6 configurations should be supported by the solution.</p> <p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell EMC VxRail solution with VMware vSAN includes software licensing for De-duplication, compression, and erasure coding as inline processes. The six (6) node solution recommended and supplied will support "failure to tolerate" FTT = 1 or 2. The 6node solution recommended is able to emulate RAID 5 or 6 for storage objects in vSAN. This means that WV L can lose up to two complete nodes and the storage will remain accessible for guests. All sizing has been performed assuming FTT=2 and RAID6 equivalent Erasure Coding.</p>
4.2.1.57	<p>Vendor provided HCI solution should include software that is able to apply storage policy rules to individual VM objects dynamically no matter where the VM is running in the cluster.</p> <p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell EMC VxRail solution with vSAN can apply storage policies to any object in vSAN, including VM's and specific VMDK's anywhere in the cluster.</p> <p>This means a storage policy applies to a VM or its storage even as it is migrating around the cluster or during maintenance activities.</p>
4.2.1.58	Vendor provided HCI solution should include software that is able to provide data at rest encryption.

	<p>100% Comply</p> <p>The Advizex recommended Dell EMC VxRail solution with vSAN includes Data at Rest encryption for vSAN data stores or VM's. In addition, encrypted data stores provide validated FIPS 140-2 protection, and support encrypted VMotion for encrypted VM's.</p>
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4.2.1.59	<p>Vendor provided HCI solution should include management software that is integrated tightly with the WV lottery's virtualization solution, VMware Vsphere. This management software should support node additions, hardware status reporting, storage group management, storage policy management, QOS management, hardware firmware updates, software updates, from within the Vsphere administration console.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell EMC VxRail solution includes VxRail manager software that is tightly integrated into vSphere.</p> <p>VxRail was jointly developed by Dell EMC and VMware and is the only fully integrated, preconfigured, and tested HCI appliance powered by vSAN. VxRail is managed through the same vCenter Server interface you will use for vSphere. It provides a familiar vSphere experience and enables streamlined deployment and the ability to extend the use of existing IT tools and processes. vCenter is used to manage vSphere, vSAN, QOS, storage group, and storage policy management. VxRail node additions, hardware status, firmware and VxRail software updates are managed using VxRail HCI System software within vCenter.</p>

4.2.1.60	<p>Vendor provided HCI solution should include software that currently supports integration into potential expansions of WVL's VMware platforms such as VDI, VCF, NSX, Horizon, vRealize Operations, vRealize Automation, SDDC Manager or vRealize Network Insight.</p>
	<p>Advizex Response: 100% Comply</p>

	<p>The Advizex recommended Dell EMC VxRail solution utilizes modern VMware virtualization platforms (vSphere et.al.) In addition, vSAN licensing is included with VxRail provided in our solution. VxRail being joint engineered and supported by VMware ensures that WVL will enjoy the highest possible integrations with other VMware platforms. Horizon VDI on VxRail is an extremely common implementation strategy as well as extending management tools to include components of the VRealize suite or NSX network virtualization. vSAN is also the exclusive software defined storage platform for VCF, or VMC on AWS. According to IDC in June 2021, VxRail has the largest market share of all HCI solutions, at over 43% of the HCI market. This ensures that third party developers will seek to offer similar levels of integration because of the market opportunities.</p>
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4.2.1.61	<p>Vendor provided HCI solution should include all software licensing for software defined storage components required to deliver the WVL solution requirements as documented in the RFP.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended HCI VxRail solution includes vSAN licensing required to deliver RAID6, D@RE, storage policies, QOS, and any and all other HCI RFP requirements for WVL.</p>

4.2.1.62 to 4.2.1.80 UDS Solution Specifications

4.2.1.62	<p>Vendor provided unstructured data storage solution (UDS) should include a minimum of four (4) nodes per location containing the storage media, CPU, RAM, and all required hardware components to deliver a fault tolerant, scale-out, unstructured storage solution with a minimum usable capacity of 23TB. Usable for UDS solution means after data protection policy has been applied and before any data reduction or compression features have been enabled.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex is recommending a (4) four node PowerScale F200 solution for each data center. PowerScale F200 is a scale-out, fault tolerant unstructured storage solution with a minimum initial capacity of 23TB per location. Each node</p>

	<p>contains media, CPU, RAM, and all required hardware to deliver a fault tolerant scale-out solution.</p> <p>This usable capacity does not count the inline, native data reduction features included in the all-flash F200 product. Each F200 node contains NVME flash media, CPU, RAM, and all required hardware to deliver this capacity and availability as required.</p>
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	<p>Vendor provided UDS should include integrated health monitoring components that regularly report component health, status, utilization, configuration information, to the OEM for support and repair enablement.</p>
4.2.1.63	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerScale UDS solution is supported by a wide variety of customer friendly integrated health monitoring and service enabling features.</p> <p>Dell EMC Support Assist Enterprise is used to send health information to Dell EMC for processing by Dell's AI/ML predictive maintenance and service tools. SupportAssist automatically detects issues, captures system state information, and initiates alerts and contact from Dell EMC.</p> <p>Dell EMC will also proactively open a case and notify WVL of and required dispatch of parts. SupportAssist also provides predictive issue detection, and reports recommendations to help with failure prevention.</p> <p>Also, The Advizex recommended Dell EMC UDS solution includes CloudIQ at no cost for storage products and VMware environments.</p> <p>CloudIQ combines monitoring, machine learning and predictive analytics so you can take quick action and simplify operations of your on-premises infrastructure and data protection in the cloud. CloudIQ supports a broad range of Dell Technologies products, including: PowerScale, IDPA, Power Edge Servers, and VxRail. For WVL, CloudIQ provides one common portal for UDS, HCI, DPS, servers, and networking for support enablement, capacity planning, and health. This health and capacity information is also shared with trusted partners, so</p>

	<p>Advizex is able to be notified of incidents generated by hardware or software as soon as WVL or Dell.</p> <p>CloudIQ consists of a hosted web application console and mobile app for support, capacity planning, health status, and configuration consistent best practices.</p>
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4.2.1.64	<p>Vendor provided UDS should include integrated health monitoring components that regularly report component health, status, utilization and configuration information, to WV lottery via free web and mobile applications for support and maintenance purposes.</p>
	<p>Advizex Response: 100% Comply</p>
	<p>The Advizex recommended Dell EMC UDS solution includes CloudIQ at no cost for storage products and VMware environments.</p>
	<p>CloudIQ combines monitoring, machine learning and predictive analytics so you can take quick action and simplify operations of your on-premises infrastructure and data protection in the cloud. CloudIQ supports a broad range of Dell Technologies products, including: PowerScale, IDPA, Power Edge Servers, and VxRail. For WVL, CloudIQ provides one common portal for UDS, HCI, DPS, servers, and networking for support enablement, capacity planning, and health. This health and capacity information is also shared with trusted partners, so Advizex can be notified of incidents generated by hardware or software as soon as WVL or Dell.</p> <p>CloudIQ is cloud hosted web application console and mobile app for support, capacity planning, health status, and configuration consistent best practices.</p>

4.2.1.65	<p>Vendor provided UDS solutions should support and include hardware for zero block elimination, inline de-duplication, and inline compression.</p>
	<p>Advizex Response: 100% Comply</p>
	<p>The Advizex recommended PowerScale solution includes licensing and specialized hardware for Zero Block elimination, inline de-duplication, and inline</p>

	compression. This included hardware acceleration ensures no unnecessary impact to performance.
4.2.1.66	<p>Vendor provided UDS should include all modules, components, hardware, cables, interfaces and switches, required to deliver scale-out architecture and anything else needed to satisfy UDS technical solution requirements.</p> <p>Advizex Response: 100% Comply</p> <p>Advizex recommends and includes all PowerScale UDS modules, components, hardware, cables, interfaces, and switches including the back-end fabric to meet all WVL's UDS requirements in this RFP.</p>
4.2.1.67	<p>Vendor provided UDS solution should include defective media retention feature for 5 years (60 months).</p> <p>Advizex Response: 100% Comply</p> <p>Advizex recommend and supplies PowerScale includes 60 months of defective media retention; Keep Your Hard Drive.</p>
4.2.1.68	<p>Each vendor provided UDS node should include a minimum of two (2) Hot-swap power supply units, all required power cords, racking hardware, and physical rack-mount chassis to contain and protect the components. Each UDS node should be configured in a manner that adds redundancy and mitigates node failures.</p> <p>Advizex Response: 100% Comply</p> <p>Each Advizex recommended PowerScale node includes two (2) Hot-swap power supplies, all required power cords, racking hardware, and a 1U rack mount chassis for the components. The Powerscale UDS solution will be configured to provide MTDL of 5,000 years or Faults to tolerate to include two drives or one entire node without data unavailability. In addition, DR failover software is included to the second replicating cluster in Bridgeport.</p>

4.2.1.69	Vendor provided UDS should include a minimum of 96GB of RAM per node or equivalent architecture protocol (CIF, SMB, NFS, etc.).
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided solution includes four (4) Dell F200 nodes each with 96GB of RAM per node.</p> <p>The Advizex recommended PowerScale solution includes support for and licenses for SMBV3, NFS, CIFS, FTP, HTTP, and HDFS.</p>

4.2.1.70	Vendor provided UDS should include a minimum of four (4) 25GbE interfaces supporting SFP28 connections for each node.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided solution includes four (4) Dell F200 nodes each with four (4) SFP28 25GBE interfaces connections per node.</p>

4.2.1.71	Vendor provided UDS should remain online, available for use, and able to deliver 23TB of unstructured usable capacity (as defined above) if any two (2) storage disks/devices fail or if one (1) node fails.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Powerscale solution will provide 23TB of unstructured usable capacity that is configured with a fault tolerance policy of +2d:1n. This means that any (2) two drives or (1) one node fails. All 23TB remains online, available, if any two disks or one node fails. Higher tolerances can be configured with additional nodes or capacity reduction.</p>

4.2.1.72	Vendor provided UDS solution should include licenses and support for existing protocols NAS protocols used by the Lottery: SMBV3, NFS, CIFS, FTP and HTTP.
	<p>Advizex Response: 100% Comply</p>

	The Advizex recommended PowerScale solution includes support for and licenses for SMBV3, NFS, CIFS, FTP, HTTP, and HDFS.
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4.2.1.73	Vendor provided UDS solution should include all software required to enable scale-out architecture, including software required for any back-end switching and management tools.
	Advizex Response: 100% Comply The Advizex recommended PowerScale solution includes all software to enable scale-out architecture, OneFS, PowerSwitch OS10 networking software, DataIQ, CloudIQ, and InsightIQ management tools.

4.2.1.74	Vendor provided UDS solutions should support and include software licensing for zero block elimination, inline de-duplication, and inline compression.
	Advizex Response: 100% Comply The Advizex recommended PowerScale solution includes software licensing and specialized hardware for Zero Block elimination, inline de-duplication, and inline compression. This included hardware acceleration ensures no unnecessary impact to performance.

4.2.1.75	Vendor provided UDS solution should include software client and connection load balancers. Solution should allow clients to connect to multiple nodes simultaneously and all data across the cluster should be available from or through any node connection pool. Load balancing software should be policy driven and allow for different policies based on client groups, storage groups, or file system objects.
	Advizex Response: 100% Comply The Advizex recommended PowerScale solution includes the SmartConnect client and connection load balancer.

	<p>SmartConnect is designed as a built-in component of OneFS to allow client connections to multiple nodes simultaneously and it enables all data from across the cluster to be available from any node connection pool.</p> <p>OneFS SmartConnect is policy driven and policies can be based on client groups, storage groups, and file system objects.</p>
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4.2.1.76	<p>Vendor provided UDS software should include the capability to automatically migrate all data for lifecycle management or expansion on the backend storage fabric handled natively by the NAS software.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerScale solution includes the OneFS native NAS operating system which has the capability to expand, replace, or recover data from the backend storage fabric natively and without downtime. When nodes are replaced, OneFS automatically and gracefully evacuates connections, and moves all protected data to the new or remaining nodes. All of this is done non-disruptively and without user interaction or impact.</p> <p>This smartfail event eliminates the need for a costly and disruptive migration again. OneFS single common namespace never has to change and WVL's customers do not need to learn new paths in the future.</p>

4.2.1.77	<p>Vendor provided UDS software should include the capability to transparently tier and migrate data workloads between multiple storage pools. Transparently means the end-user is not aware that their data has been moved between storage pools. The UDS solution software should also include the capability to manage this automated storage tiering by policy at folder level.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerScale solution includes OneFS native SmartPools which provides WVL the most cost effective and seamless way to tier data and migrate workloads between storage pools.</p>

	<p>Data tiering happens completely transparent to the end user and WVL's customers will not be aware that their data has been tiered. This is because OneFS provides one single namespace which doesn't change even if the data is tiered.</p> <p>Because OneFS is a policy driven solution, these tiering policies can be used to manage at folder level, or many other attributes such as client groups or server groups.</p>
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4.2.1.78	<p>Vendor provided UDS solution should include software licenses and capability for WORM storage for 64TB Raw (32TB Raw per Site) to be controlled by policy. This policy enabled WORM storage once written cannot be modified. This replaces the current hardware (Centera) used for Document Imaging.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerScale UDS solution includes WORM equivalent licensing (SmartLock) for 64TB RAW capacity (32 per site) and is controlled by policy. SmartLock (WORM) enabled storage policies deliver Write Once Read Many capabilities by policy where WVL requires them.</p>

4.2.1.79	<p>Vendor provided UDS solution should include software licenses and capability for 64TB Raw to replicate file level WORM storage bi-directionally between our two data centers. This software should be controlled by policy with the potential for different replication parameters per folder or content type.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerScale UDS solution includes replication licensing for WORM (SmartLock) for 64TB RAW capacity (32TB per site) and is controlled by policy. Replication is controlled by policy and fully supports different replication parameters per folder, content, type, source, and many other options. WORM replication with Powerscale replicates data in a manner that retains data protection policy, attributes, meta data, permissions, and immutability to the destination cluster.</p>

4.2.1.80	Vendor provided UDS solution should include software that is able to provide data-at-rest encryption.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included UDS solution includes software and hardware to deliver Data-at-rest encryption. Advizex has chosen to provide this with DARE included and enabled because of best practices but is fully able to deliver unencrypted after award if WVL would prefer.</p>

4.2.1.81 to 4.2.1.120 DPS Solution Specifications

4.2.1.81	Vendor provided DPS should include integrated health monitoring components that regularly report component health, status, utilization, configuration information, to the OEM for support and repair enablement.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA is supported by a wide variety of customer-friendly integrated health monitoring and service-enabling features. Dell EMC Support Assist Enterprise is used to send health information to Dell EMC for processing by Dell's AI/ML predictive maintenance and service tools.</p> <p>SupportAssist automatically detects issues, captures system state information, and initiates alerts and contact from Dell EMC. Dell EMC will also proactively open a case and notify WVL of and required dispatch of parts. SupportAssist also provides predictive issue detection, and reports recommendations to help with failure prevention.</p> <p>CloudIQ is populated with support Assist data combining monitoring, machine learning and predictive analytics so you can take quick action and simplify operations of your on-premises infrastructure and data protection in the cloud. CloudIQ supports a broad range of Dell Technologies products, including: PowerScale, IDPA, Power Edge Servers, and VxRail. For WVL, CloudIQ provides one common portal for UDS, HCI, DPS, servers, and networking for support enablement, capacity planning, and health. This health and capacity information is also shared with trusted partners, so Advizex can be notified of incidents generated by hardware or software as soon as WVL or Dell.</p>

	<p>Vendor provided DPS should include integrated health monitoring components that regularly report component health, status, utilization, configuration information, to WV lottery via free web applications for support, capacity planning, health status, and configuration consistency.</p>
4.2.1.82	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell EMC DPS solution includes CloudIQ at no cost for storage products and VMware environments.</p> <p>The proactive alerts will also be delivered via Cloud IQ to WVL and trusted Advisors as push notifications on mobile devices, health status emails, and Dell initiated phone calls or emails to WVL designated employees.</p> <p>CloudIQ combines monitoring, machine learning and predictive analytics so you can take quick action and simplify operations of your on-premises infrastructure and data protection in the cloud. CloudIQ supports a broad range of Dell Technologies products, including: PowerScale, IDPA, Power Edge Servers, and VxRail. For WVL, CloudIQ provides one common portal for UDS, HCI, DPS, servers, and networking for support enablement, capacity planning, and health.</p>

	<p>Each vendor provided DPS solution should be a factory integrated form factor appliance or less containing all backup application servers, reporting servers, and data protection storage.</p>
4.2.1.83	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DP4400 is a factory-integrated 2U appliance containing all backup application servers, reporting servers, and built-in Data Domain storage with 60TB of usable capacity.</p>

4.2.1.84	<p>Each Vendor provide DPS solution should include all hardware, including but not limited to CPU, RAM, cache, servers, hosts, guests, in order to deliver two (2) independent data protection and recovery solutions as defined by Gartner.</p>
	<p>Advizex Response:</p>

	<p>100% comply</p> <p>The Advizex recommended IDPA DP4400 is a factory integrated 2U appliance containing all backup application servers, reporting servers, and built-in Data Domain storage with 60TB usable capacity. The components and functionality meet and exceed the definition of data protection and recovery solutions as defined by Gartner.</p> <p>IDPA also includes a licensed hypervisor running on a dedicated CPU, RAM, cache appliance, that hosts all the backup and recovery software, web applications, management for the Data Domain storage. All the Data protection application guest VM's run on the provided, licensed VMware hypervisor that is contained in each IDPA appliance.</p> <p>This is far superior to other competitive solutions that require WVL to provide a licensed hypervisor, licensed Windows Servers, storage, CPU, and RAM in WVL's production VMware environment.</p> <p>IDPA is the only solution that includes everything WVL needs for a complete data protection and recovery solution in one 2U box per data center.</p>
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	<p>Vendor provided DPS solution should include hardware for reporting services that can report and monitor SLA's for backup operations.</p>
4.2.1.85	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA solution includes advanced search, reporting, and analytics functions. System Manager consolidates day-to-day management functions, including monitoring, management, reporting, and deep search. System Manager also provides centralized views of job activity, health, capacity, and pre-defined KPI's or SLA's.</p>

	<p>Vendor provided DPS solution should include defective media retention feature for 5 years (60 months).</p>
4.2.1.86	<p>Advizex Response: 100% Comply</p>

	The Advizex recommended IDPA DP4400 includes defective media retention for (5) five years or (60) sixty months. Also known as Keep Your Hard Drive.
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4.2.1.87	Vendor provided DPS should include all modules, components, hardware, cables, interfaces, switches, or other required components to deliver modular DPS architecture and any other DPS technical solution requirements.
	Advizex Response: 100% Comply
	The Advizex recommended IDPA DP4400 is a factory integrated 2U appliance containing all backup application servers, reporting servers, and built- in Data Domain storage with 60TB usable capacity.
	Since the appliance is an all-inclusive product in a 2U Chassis, all cables, interfaces, components, modules, are self-contained within the appliance.
	Cables and interfaces required to connect to the vSphere environment as well as Out of band management are also included.

4.2.1.88	Each DPS solution host should include a minimum of two (2) Hot-swap power supply units per chassis, all required power cords, racking hardware, and physical rack-mount chassis to contain and protect the components. Each DPS host should contain redundant components to mitigate device failures.
	Advizex Response: 100% Comply
	The Advizex recommended IDPA DP4400 is a factory integrated 2U appliance containing all backup application servers, reporting servers, and built- in Data Domain storage with 60TB usable capacity. Each IDPA is built with redundant components, including but not limited to Data Domain invulnerability architecture, and redundant power and interfaces.
	Since the appliance is an all-inclusive product in a 2U Chassis, all cables, interfaces, components, modules, are self-contained within the appliance. The Appliance has (2) Two hot-swap power supplies with power cords, along with racking hardware for the chassis.

4.2.1.89	Vendor provided DPS should include a minimum of two (2) 10GbE network connections supporting SFP+ interfaces. (Small Form Factor Pluggable)
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution include two (2) 10GbE SFP+ network interfaces per location.</p>

4.2.1.90	Each vendor provided DPS solution should include a minimum of 60TB (see 4.2.1.11) usable capacity of data protection storage hardware per Site.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes software licensing and hardware for 60TB of usable storage capacity per location/site/solution. An additional 36TB of hardware capacity is included but not licensed. This allows WVL to license additional DPS capacity quickly and easily without hardware installation.</p>

4.2.1.91	Each Vendor provided DPS solution should include all software, including but not limited to hypervisor, operating systems, backup software, agents, plug-ins, de-duplication or compression licenses, virtual appliances and guests, in order to deliver two (2) independent data protection and recovery solutions as defined by Lottery requirements.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA solution is a fully engineered converged backup appliance. It contains a licensed hypervisor, operating systems, backup software, agents, plug-ins, Data Domain de-duplication and compression licenses, as well as all other licensed VM's and virtual appliances to deliver a fully functional data protection, recovery, reporting, solution for each location.</p>

4.2.1.92	Vendor provided DPS solution should include all software required to perform recoveries from data-at-rest in a deduplicated and compressed state.
	Advizex Response: 100% Comply
	<p>The Advizex recommended IDPA solution is based on Data Domain and EMC backup and recovery tools. When Data Domain is paired with EMC backup applications, data is de-duplicated at both the client and storage side.</p> <p>When restoring data, Data Domain sends compressed and already reduced data sets to the agents. This accelerates time to recover as well as reducing any bandwidth impacts which may occur with solutions that are not able to do this.</p>

4.2.1.93	Vendor provided DPS solution should include all software required to attach and boot a VM guest from any restore point in the data protection storage and vMotion the VM guest back to primary block storage on the HCI solution.
	Advizex Response: 100% Comply
	<p>The Advizex recommended IDPA solution contains high speed flash storage and connectivity to restore an entire VM from any restore point directly on the IDPA. This feature called "Instant Access" is specifically designed to permit booting a VM directly from the backup catalog and either VMotion back into production or restore as a clone permitting WVLT to browse the old VM version and restore just what is needed.</p>

4.2.1.94	Vendor provided DPS solution should include all software required to use Key Management Interoperability Protocol (KMIP) for data-at-rest encryption. (Future Use).
	Advizex Response: 100% Comply
	<p>The Advizex recommended IDPA solution includes the capability to encrypt data at rest with self-managed keys and also supports external key manager that's KMIP compliant. IDPA also includes In-flight encryption to deliver the most advanced data security for WVLT.</p>

4.2.1.95	Vendor provided DPS solution should include software for reporting services that can report and monitor SLA's for backup operations.
	<p>Advizex Response: 100% comply</p> <p>The Advizex recommended IDPA DP4400 includes Data protection advisor reporting and SLA monitoring applications. These web based applications are hosted on the Appliances and don't require additional VM's on WVL's HCI platforms.</p>

4.2.1.96	Vendor provided DPS solution should include all software required to encrypt data-in-flight for site-to-site replication.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA solution includes the capability and software to encrypt data at rest with self-managed keys and also supports external key manager that's KMIP compliant. IDPA also includes In-flight replication encryption to deliver the most advanced data security for WVL.</p>

4.2.1.97	Vendor provided DPS solution should include all software required to provide RBAC.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended DPS IDPA solution includes RBAC mapping of AD groups to roles on IDPA. IDPA allows granular access control to functions, if desired, and permits DBA's to perform limited backup and restore from SQL Databases without requiring a backup admin.</p>

4.2.1.98	Vendor provided DPS solution should include all software required to enable the backup application to be aware of and control replication.
	<p>Advizex Response: 100% Comply</p>

	<p>The Advizex recommended DPS IDPA solution includes Data Domain native replication which is completely in control of replication activities.</p> <p>This allows Data Domain replication to replicate de-duplicated data, only having to transfer changed bits from one Data Domain to another. This drastically reduces the amount of bandwidth required between WVL's Charleston and Bridgeport Data centers.</p> <p>Data Domain also includes policies to control replication urgency, timing, and bandwidth consumption, further reducing any potential impact to other production data needs.</p>
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	<p>Vendor provided DPS solution should include all software required to support replication bandwidth throttling.</p>
4.2.1.99	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA solution includes Data Domain native replication which is completely in control of replication activities. This allows Data Domain replication to replicate de-duplicated data, only having to transfer changed bits from one Data Domain to another. This drastically reduces the amount of bandwidth required between WVL's Charleston and Bridgeport Data centers.</p> <p>Data Domain also includes policies to control replication urgency, timing, and throttling bandwidth consumption, further reducing any potential impact to other production data needs.</p>

	<p>Vendor provided DPS solution should include all software required to provide a web-based management interface capable of monitoring multiple systems, which will provide the capability to monitor both Charleston and Bridgeport solutions from either interface.</p>
4.2.1.100	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA System Manager consolidates day-to-day management functions, including monitoring, management, reporting, and deep search. System Manager also provides centralized views of job activity,</p>

	health, capacity, and pre-defined KPI's or SLA's. This interface will show and manage both solutions from either IDPA management console.
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4.2.1.101	Vendor provided DPS solution should include all software required to deliver network-efficient site-to-site replication.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA solution includes Data Domain native replication which is completely in control of replication activities. This allows Data Domain replication to replicate de-duplicated data, only having to transfer changed bits from one Data Domain to another. This drastically reduces the amount of bandwidth required between WVL's Charleston and Bridgeport Data centers. Many competitive products only deliver source side deduplication, while Data Domain is global and doesn't waste bandwidth moving duplicate blocks across the WAN just to discard them.</p>

4.2.1.102	Vendor provided DPS solution should include all software required to backup and also to recover operating systems, files, databases, and applications in both physical and virtual environments.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes mature and feature rich backup software to backup and recover operating systems, files, databases, and applications in physical and virtual environments. EMC networker, Avamar, DDboost, and others are all included in each IDPA solution. This delivers two complete data protection and recovery solutions for WVL.</p>

4.2.1.103	Vendor provided DPS solution should include all software required to assign backup and retention policies that align with WV Lottery recovery objectives.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes mature and feature rich backup software with automated backup integration into Vsphere helping</p>

	assign and identify backup needs and set retention policies meeting WVL's recovery objectives.
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4.2.1.104	Vendor provided DPS solution should include all software required to report success and failure of backup or recovery tasks. This includes all web server software and all application server software to provide these reports via email or web applications.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes mature and feature rich backup software and reporting capabilities with IDPA System Manager consolidating day to day management functions, including monitoring, management, reporting, and deep search. System Manager will show backup success, failure, and SLA's from one console for both IDPA solutions. All of these functions run on the IDPA – no server hosting or additional licensing required. Email notifications and alerts are also fully supported.</p>

4.2.1.105	Vendor provided DPS solution should include all software required to reduce the amount of time to run backups. This includes capability to de-duplicate backup data at source and destination to reduce the amount of data transmitted over the network.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes DDBOOST technology for speeding up backups, as well as Data Domain with industry leading variable length de-deduplication. Data Domain built into IDPA supports global data reduction, which reduces data with variable length de-duplication and compression algorithms, supporting data reduction at source system (client side) as well as storage side, and in transit between the two IDPA systems – reducing LAN and WAN bandwidth requirements. All of these reduce the time to perform or restore backups.</p>

	<p>Vendor provided DPS solution should include all hardware and software required to provide built in fault avoidance and containment of issues in the data protection storage.</p>
4.2.1.106	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes Data Domain invulnerability architecture to ensure data integrity. The DIA includes 4 different mechanisms to ensure data remains consistent and available. Data Domain is unique in the industry in that it checks all incoming data sent as it's stored, it never appends new data to previous data, it protects against power failure or multiple disk failures with background data scrubbing and on the fly error correction. Data Domain also includes self-describing metadata so the system can recover from scratch in a reasonable timeframe.</p>

	<p>Vendor provided DPS solution should include all software required to provide advanced integration with VMware vSphere VADP which allows for full VM image level backup with change block tracking, incremental virtual machine image file restore, file level restore and single step source to target backup.</p>
4.2.1.107	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes backup software supporting VADP, which offloads backup processes to a VADP proxy server and offers change block tracking with vSphere, full image level backup, file level restore, incremental VM image file restore, and single step source to target backup. This also eliminates the need for traditional backup windows by leveraging native VMware snapshot technology ensuring WVL's systems are not impacted by backup processes.</p>

	<p>Vendor provided DPS solution should include all software to integrate with and support backups and restores directly from Microsoft SQL and Exchange to include application consistent backups.</p>
4.2.1.108	<p>Advizex Response: 100% Comply</p>

	<p>The Advizex recommended IDPA DPS solution includes the DDBOOST plug-in for Microsoft SQL which extends the Microsoft job scheduler and provides DBA's the capability to directly backup and restore SQL servers from IDPA. By integrating into the MSSQL backup tools, it ensures that the backups are application-consistent as opposed to just a backup file sitting on a folder. This capability also allows WVL management to delegate permission for DBA's to perform custom backups for any reason from the native tools. This prevents DBA's from consuming valuable flash server space on the SQL VMs or UDS shares while allowing admins to control retention and space consumption on the IDPA for these actions.</p>
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4.2.1.109	<p>Vendor provided DPS solution should include all software required to natively tier de-duplicated data to public or private cloud object storage for long-term data retention.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes the capability to natively tier de-duplicated data to on-prem Object storage or public cloud object storage for long-term data retention. The solution includes 5TB of cloud tiering and cloud DR and can be expanded by WVL if needed in the future.</p>

4.2.1.110	<p>Vendor provided DPS solution should include all software required to allow for multiple Ethernet links to be aggregated together for increased performance and failover.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes support for link aggregation via industry standard Link Aggregation Control Protocol or LACP. This provides increased performance and availability as opposed to single interfaces or links.</p>

4.2.1.111	<p>Vendor provided DPS solution should include all software required to de-duplicate globally across the entire system and across backup application type.</p>
	<p>Advizex Response:</p>

	<p>100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes Data Domain with industry leading variable-length de-deduplication. Data Domain built into IDPA supports global data reduction, which reduces data with variable length de-duplication and compression algorithms, supporting data reduction at source system (client side) as well as storage side, and in transit between the two IDPA systems – reducing LAN and WAN bandwidth requirements. Data reduction on storage isn't dependent on application type, however included native backup applications with IDPA also include complementary client side data reduction further increasing efficiency.</p>
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4.2.1.112	<p>Vendor provided DPS solution should include all software required to provide NFS, CIFS and backup acceleration services at the same time in the same system.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes all software required to provide NFS, CIFS, and backup acceleration services at the same time in the same system.</p>

4.2.1.113	<p>Vendor provided DPS solution should include all software required to act as a destination for archive storage and will have the ability to lock files from being edited after they have been archived.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes all software required to provide a governance and compliance certified archive solution. The Data Domain operating system in IDPA support consolidating backup and archive in the same platform with inline encryption and locked archive preventing modification after archive.</p>

4.2.1.114	Vendor provided DPS solution should include all software required to provide the ability for non-disruptive Disaster Recovery testing, without an actual failover.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes Recover Point for Virtual Machines (RPVM) which provides software defined VM replication and failover between WVL's sites, as well as the ability to restore backups to alternate locations, hostnames, IP's, or storage. This allows WVL to test backups, as well as test replication and failover strategies without affecting business critical applications or downtime.</p>

4.2.1.115	Vendor provided DPS solution should include all software to replicate site-to-site at the same time as backups with no requirement for a specific "replication window".
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes Data Domain replication and backup software that supports replication as well as backups to happen concurrently. Unlike other solutions, IDPA permits WVL to avoid scheduling around variable backup and recovery windows, allowing WVL to focus on other more important activities and reduce the human resources required to manage the backup system.</p>

4.2.1.116	Vendor provided DPS solution should include all software required to provide functionality to continually verify that the data stored on the system can be accessed and restored in its original form.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes Data Domain invulnerability architecture to ensure data integrity. The DIA includes 4 different mechanisms to ensure data remains consistent, available, and</p>

	<p>unmodified. Data Domain is unique in the industry in that it checks all incoming data sent as it's stored, it never appends new data to previous data, and it protects against power failure or multiple disk failures with background data scrubbing and on the fly error correction. Data Domain also includes self-describing metadata so the system can recover from scratch in a reasonable timeframe.</p>
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4.2.1.117	<p>Vendor provided DPS solution should include all software required to de-duplicate data inline into variable length segments before it is written to media.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes Data Domain software that employs source side variable-length deduplication that minimizes disk utilization and ensures that data in flight is already deduplicated when it leaves the source as well as when first stored. This is critical to network backup performance as is not possible with solutions not offering client-side variable length deduplication. The Data Domain software included will also de-duplicate data in memory once received before committing to media to ensure the fastest data-reduction and backup performance.</p>

4.2.1.118	<p>Vendor provided DPS solution should include socket-based or capacity licenses that activate and enable a minimum of 60TB (See 4.2.1.11) of usable data storage per solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes software licensing for 60TB of usable storage capacity per location/solution.</p>

4.2.1.119	<p>Vendor provided DPS solution should include an indexed search function to locate and restore files within the backup set.</p>
	<p>Advizex Response: 100% Comply</p>

	<p>The Advizex recommended IDPA DPS solution includes IDPA System Manager consolidating day to day management functions, including monitoring, management, reporting, and deep search. The deep indexed search functions permit WVL to search within all backup storage to assist in recovery of single files within data sets. All of these functions run on the IDPA – no server hosting or additional licensing required.</p>
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4.2.1.120	<p>Vendor provided DPS solution should include software licensing for 60TB (See 4.2.1.11) of NFS compatible file system backup acceleration.</p>
	<p>Advizex Response: : 100% Comply</p> <p>The Advizex recommended IDPA DPS solution includes software licensing for 60TB of NFS compatible file system backup acceleration per location/solution.</p>

4.2.1.121 to 4.2.1.140 Networking Specifications

4.2.1.121	<p>Vendor provided networking solution should be able to pass any OEM validation scripts, tools, etc. and therefore be supported as an effective networking solution by the OEM of the Proposed HCI, UDS, DPS, and server solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell Networking hardware is on the Hardware Compatibility List (HCL) for VxRail, PowerScale, IDPA, and PowerEdge servers.</p> <p>This networking hardware will pass OEM network validation scripts and tools for these products and is officially supported by Dell EMC with reference architectures and configs based on the switches with Dell EMC systems.</p>

4.2.1.122	<p>Vendor provided networking solution should be tightly integrated with the HCI solution lifecycle management process. This should include automatic VLAN configurations when nodes are added, and/or included in the automated firmware update process.</p>
	<p>Advizex Response:</p>

	<p>100% Comply</p> <p>The Advizex recommended Dell Networking supports SmartFabric integration with VxRail. SmartFabric can automate 99% of the network configuration steps for leaf and spine fabrics across multiple racks. This integration greatly simplifies the network management required when adding nodes and automates VLAN configurations as nodes are added.</p> <p>VxRail and Dell networking also help to automate firmware updates for switches and nodes. Consideration should be taken to ensure that network services remain available during node upgrades.</p>
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4.2.1.123	<p>Vendor provided networking solution should support smart fabric features that reduce the amount of management required for the network components such as VLAN auto-configuration.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell Networking supports SmartFabric integration with VxRail. SmartFabric can automate 99% of the network configuration steps for leaf and spine fabrics across multiple racks. This integration greatly simplifies the network management required when adding nodes and automates VLAN configurations as nodes are added.</p>

4.2.1.124	<p>Vendor provided networking solution should be compliant and be certified for use with the HCI OEM solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell Networking hardware is on the Hardware Compatibility List (HCL) for VxRail, PowerScale, IDPA, and PowerEdge servers. This networking hardware will pass OEM VxRail network validation scripts and tools and is officially supported by Dell EMC.</p>

4.2.1.125	Vendor provided networking solution should include all cables, racking hardware, SFP's interfaces, transceivers, and other components not specifically listed required to connect all hardware included in this entire RFP to the network with (2) two or more connections each.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell Networking includes all cables, racking hardware, SFP's, interfaces, cables, and transceivers so that each supported hardware component supplied will have at least two (2) connections each.</p> <p>Each TOR switch provided also includes 40Gb SFP28 optics and long run fiber cables to connect two (2) interfaces from each TOR to WVL's Core routers in Charleston and Bridgeport.</p> <p>In addition to the requested Top of rack switches requested in this RFP – Advizex has also recommended and provided for (1) out of band management 48 port switch per data center. This is to provide WVL the capability to segregate management traffic and support management traffic away from the 25Gb TOR networks. This can easily be removed for nominal savings if WVL already has this capability – but is included in our solution pricing response.</p>

4.2.1.126	Vendor provided networking solution should contain a minimum of two (2) L2 and L3 capable 48 port Ethernet TOR server aggregation switches per location.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell Networking solution includes two (2) 48port 25GbE L2 and L3 capable Ethernet TOR server aggregation switches per location.</p>

4.2.1.127	Each Vendor provided networking switch should include a minimum of forty-eight (48) SFP28 interfaces, two (2) QSFP28-DD interfaces, and four (4) QSFP28 interfaces.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell Networking solution includes (48) SFP28 interfaces, (2) QSFP28-DD interfaces, and (4) QSFP28 interfaces per switch.</p> <p>The QSFP28-DD interfaces future proof the solution providing connectivity at 400Gbs.</p>

4.2.1.128	Each vendor provided networking switch should include concurrent support for a forty-eight (48) 25Gbps connections, and eight (8) 100Gbps connections all at full rate and non-blocking.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell Networking solution includes concurrent support for a forty-eight (48) 25Gbps connections, and eight (8) 100Gbps connections all at full rate and non-blocking per switch.</p>

4.2.1.129	Each vendor provided networking switch should include scalable a L2 and L3 Ethernet switching with QoS and a full complement of standards based IPv4 and IPv6 features, including OSPF and BGP routing support.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell Networking S series data center class switches consists of enterprise-ready full featured L2/L3 switches with routing including QOS, OSPF, and BGP routing support. These switches are not simple web managed switches, or "light L3" products. Dell networking S series switches are ready for software defined networking, and use all 25Gb access ports and 100Gb ports for uplink and interswitch links.</p>

	Each vendor provided networking switch should include L2 multipath support via Virtual link Trunking (VLT) and Routed VLT support, or a similar protocol such as vPC, designed for top of rack switches that minimize VSAN storage traffic on the core switches.
4.2.1.130	<p>Advizex Response:</p> <p>The Advizex recommended and included Dell Networking S series Data center class switch solution consists of enterprise ready full featured L2/L3 switches and software with routing and 100Gb L2 multipath support. Dell networking S series Data center class switches use VLT and router VLT support to deliver a modern, high performance leaf and spine architecture. This capability allows WVL to keep critical storage (VSAN) HCI traffic off the core network – ensuring the best possible performance and reliability for their server environment.</p>

	Each vendor provided networking switch should support VXLAN gateway functionality support for bridging and routing the non-virtualized and virtualized overlay networks with line rate performance.
4.2.1.131	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended and included Dell Networking S series Data center class switch solution consists of enterprise ready full featured L2/L3 switches with VXLAN gateway support for bridging and routing the virtualized or non-virtualized overlay networks with line rate performance.</p> <p>This positions WVL perfectly for future virtualized networking and security with VMware NSX if desired. NSX, although not in scope of this solution, is an enterprise class virtualized networking and security solution that enables customers like WVL to provision firewall and security services much faster than traditional methods, while also granting advanced visibility into traffic flows within the vSphere environment.</p> <p>The Dell networking solution is 100% ready for this when WVL is.</p>

4.2.1.132	Each vendor provided networking switch should include support for routable RoCE to enable convergence of compute and storage on Leaf/Spine fabric.
	<p>Advizex Response:</p> <p>The Advizex recommended and included Dell Networking S series Data center class switch solution consists of enterprise ready full featured L2/L3 switches and software support routable RoCE. RDMA over converged Ethernet is a leading technology for future platforms, storage, and apps to more efficiently and quickly gain access to storage.</p> <p>This capability to converge compute and storage on leaf/spine fabric is included now, for when WVL may desire these capabilities.</p>

4.2.1.133	Each vendor provided networking switch should include redundant, hot swappable power supplies and fans.
	<p>Advizex Response:</p> <p>100% Comply</p> <p>Each Advizex recommended and included Dell Networking S series Data center class switch includes redundant, dual hot-swap power supplies and fans.</p>

4.2.1.134	Vendor provided networking solution should include all components to connect all HCI solution nodes at 25Gbs, all UDS solution nodes at 10Gbs, all DPS nodes at 10Gbs, and all servers at 10Gbs.
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended and included Dell Networking S series data center class switch solution support 25Gbs on all interfaces, and supports stepping down to 10Gbs for UDS, DPS, and servers.</p>

	<p>Vendor provided networking solution should include all required hardware including but not limited to OM4 fiber cables, switch side transceivers or other components required to create two (2) 40GbE paths for redundancy from each TOR paths to WVL's existing core network at each location. WVL will provide transceivers for core side equipment only. All other components should be included in this networking solution.</p>
4.2.1.135	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell Networking S series Data center class switch solution includes all required hardware required to connect to WVL's core network with redundancy at 40GbE except transceivers for WVL's Cisco Core equipment.</p> <p>This includes long run OM4 cables, switch side transceivers, and hardware components to create (2) 40GbE paths from each TOR to WVL's existing core network.</p>

	<p>Vendor provided networking solution should support smart fabric features that reduce the amount of management required for the network components such as VLAN autoconfig.</p>
4.2.1.136	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell Networking software supports SmartFabric integration with VxRail.</p> <p>SmartFabric greatly simplifies the network management required when adding nodes and automates VLAN configurations as nodes are added.</p>

4.2.1.137	Vendor provided networking solution should be capable of integration, upgrades, and management by the HCI solution lifecycle processes.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell Networking software supports SmartFabric integration with VxRail. SmartFabric can automate 99% of the network configuration steps for leaf and spine fabrics across multiple racks.</p> <p>This level of integration simplifies the network management required when adding nodes and automates VLAN configurations as nodes are added. VxRail and Dell networking can also help to automate firmware updates for switches along with the HCI lifecycle patch process. Special consideration should be taken to ensure that network services remain available during node upgrades.</p>

4.2.1.138	Vendor provided networking solution should include zero-touch deployment software features.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell Networking solution includes Open Network Install Environment or ONIE. ONIE provides for auto-discovery and zero-touch switch operating system deployment. ONIE also provides zero-touch software updates.</p>

4.2.1.139	Vendor provided networking solution software should support automated configuration steps using Ansible as defined above in definitions.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell Networking solution includes native agentless Ansible support. Dell partnered with Ansible and offers a free collection of modules for Dell EMC Networking in the Ansible Galaxy. This capability and integration allow WVL to deliver full network configuration automation with Dell networking.</p>

4.2.1.140.1	<p>Each vendor provided networking switch should include all of the following specifications:</p> <p>4.2.1.140.1. Software licensing for scalable L2 and L3 Ethernet switching with QoS and a full complement of standards based IPv4 and IPv6 features, including OSPF and BGP routing support.</p>
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended and included Dell Networking S series Data center class switch solution consists of enterprise ready, full featured, and licensed L2 and L3 switches and software for routing IPv4, IPv6, QOS, OSPF, and BGP routing support.</p> <p>These switches are not simple web managed switches, or “light L3” products. Dell networking S series switches are ready for software defined networking and use all 25Gb access ports and 100Gb ports for uplink and inter-switch links.</p>

4.2.1.140.2	<p>Each vendor provided networking switch should include all of the following specifications:</p> <p>4.2.1.140.2. Software licensing for L2 multipath support via Virtual Link Trunking (VLT) and routed VLT support.</p>
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended and provided Dell Networking S series data center class switch solution include enterprise ready full featured L2/L3 switches with routing and 100Gb L2 multipath software and support.</p> <p>Provided Dell networking S series Data center class switches include VLT and router VLT software and support to deliver a modern, high performance leaf and spine architecture.</p>

4.2.1.140.3	<p>Each vendor provided networking switch should include all of the following specifications:</p> <p>4.2.1.140.3. Software licensing for VXLAN gateway functionality support to bridge and route the non-virtualized and virtualized overlay networks with line rate performance.</p>
	<p>Advizex Response:</p> <p>The Advizex recommended and included Dell Networking S series Data center class switch solution consists of enterprise ready full featured L2/L3 switches and software with VXLAN gateway support. This positions WVL perfectly for future virtualized networking and security with VMware NSX if desired. NSX, although not in scope of this solution, is an enterprise class virtualized networking and security solution that enables customers like WVL to provision firewall and security services much faster than traditional methods, while also granting advanced visibility into traffic flows within the vSphere environment. The Dell networking solution is 100% ready for this when WVL is.</p> <p>The Dell Networking switches and software provided are able to bridge and route the non-virtual and virtualized overlay networks with line rate performance.</p>

4.2.1.140.4	<p>Each vendor provided networking switch should include all of the following specifications:</p> <p>4.2.1.140.4. Software licensing for routable RoCE to enable convergence of compute and storage on Leaf/Spine fabric.</p>
	<p>Advizex Response:</p> <p>100% Comply</p> <p>The Advizex recommended and provided Dell Networking S series Data center class switch solution consists of enterprise ready full featured L2/L3 switches with software and support for routing of RoCE. RDMA over converged Ethernet is a leading technology for future platforms, storage, and apps to more efficiently and quickly gain access to storage. The Dell networking is ready now, for when WVL may desire these capabilities.</p>

4.2.1.141 to 4.2.1.151 Domain Controllers Solution Specifications (Physical Server)

4.2.1.141	<p>Vendor provided Domain Controller solution should include three (3) industry standard X86 rack-mount servers.</p> <p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided solution includes three (3) Dell rack mount industry-standard x86 rack mount servers</p>
4.2.1.142	<p>Each of these DC servers should support and include all required components to host a locally installed Windows Server 201 x Operating System. Two servers will be installed in Charleston and one server in Bridgeport. The Lottery may include additional Domain Controllers as VM guests.</p> <p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes 3 servers that fully support latest versions of Windows Server and will be deployed and installed with two (2) in Charleston, and one(1) in Bridgeport WV. The Provided servers support additional Domain Controllers as VM guests.</p>
4.2.1.143	<p>Each DC server should include a minimum of 16GB RAM running at 2666Mhz, and one Intel E-2124 CPU or greater. If vendor chooses to offer an alternate CPU, the minimum core count per server is 4, and minimum clock speed is 3.3Ghz. Single socket servers are preferred, but dual socket servers are acceptable if the additional 3 sockets of Microsoft software licensing and co-termed premium support are provided as a component of this RFP.</p> <p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes (3) Dell rack mount industry-standard servers with 16GB 3200Mhz of RAM, and one Intel E-2124 CPU. No other Microsoft licensing is required as the requested CPU and socket count has been preserved.</p>

4.2.1.144	Each DC server should include a minimum of two (2) 10GbE SFP+ compatible network interfaces.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided DC Servers include two (2) 10GbE SFP+ network interfaces per server.</p>

4.2.1.145	Each DC server should include a hardware-based RAID controller for the purpose of storage fault tolerance.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes (3) Dell rack mount industry-standard servers each with hardware-based RAID controllers with all flash media providing high performance and storage fault tolerance.</p>

4.2.1.146	Vendor provided DC server solution should include all-flash storage media for the purpose of hosting WV Lottery physical servers.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes (3) Dell rack mount industry-standard servers each with all flash storage media providing high performance and storage fault tolerance.</p>

4.2.1.147	Each vendor provided DC server should include a minimum of 480GB of usable, persistent, all-flash, block storage capacity. This must be calculated after any fault tolerance methods, have been accounted for.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes three (3) Dell rack mount industry-standard servers each with 480GB of usable all flash media in a RAID1 configuration providing high performance and storage fault tolerance.</p>

4.2.1.148	<p>Each vendor provided DC server should include the 480GB usable storage capacity as defined above while configured with 'primary level of failures to tolerate' configured as (1) one Drive. This means any storage device may fail and the entire 480GB of storage capacity must remain online, usable, and available for use. This should be a hardware-based raid mirror set</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes three (3) Dell rack mount industry standard servers each with 480GB of usable all flash media in a RAID1 configuration providing high performance and storage fault tolerance. Each server will have (2) 480GB All flash drives included and configured as a hardware mirror set. This will allow 480GB of capacity to be available, usable, and bootable if either drive were to fail at any time.</p>

4.2.1.149	<p>Vendor provided DC server solution should include software that leverages integrated health monitoring components to regularly report component health, status, utilization, and configuration information, to the OEM for support and repair enablement.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerEdge is supported by a wide variety of customer-friendly integrated health monitoring and service-enabling features.</p> <ul style="list-style-type: none"> • Dell EMC Support Assist Enterprise is used to send health information to Dell EMC for processing by Dell's AI/ML predictive maintenance and service tools. • SupportAssist automatically detects issues, captures system state information, and initiates alerts and contact from Dell EMC. • Dell EMC will also proactively open a case and notify WVL of and required dispatch of parts. • SupportAssist also provides predictive issue detection, and reports recommendations to help with failure prevention. • PowerEdge also now is supported by CloudIQ – meaning that one Web/Mobile accessible application can be used to monitor the entire solution at a glance.

4.2.1.150	<p>Vendor provided DC server solution should include software that leverages integrated health monitoring components to regularly report component health, status, utilization, and configuration information, to WV lottery via free web and mobile applications for support, capacity planning, health status, and configuration consistency.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided PowerEdge DC server solution uses SupportAssist Enterprise to collect health, status, utilization, and config information. This information is used to populate CloudIQ, the included customer/Vendor facing Web application and mobile application where WVL and their trusted advisors can monitor their entire Dell EMC environment conveniently on the go.</p> <p>CloudIQ has predictive capacity planning tools, health scores and details, as well as configuration best practices monitoring and support case tools.</p>

4.2.1.151	<p>Vendor provided DC server solution should include software providing comprehensive server management including tools and components required to deliver premium functionality via an integrated web-based management GUI and a CLI from within the guest operating system.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended PowerEdge servers include IDRAC9 Enterprise software and OpenManage Enterprise. IDRAC and OME combine to provide a comprehensive server management solution.</p> <p>Also included are tools and components to assist in lifecycle management of drivers, firmware, and deploy operating systems. These tools are available from within the windows operating system, web based GUI, or CLI.</p>

ADDITIONAL SPECIFICATIONS — PROJECT GOALS

4.2.1.152 to 4.2.1.160 Installation Specifications

4.2.1.152	Vendor provided HCI solution should include OEM premium installation and deployment services for all included hardware and software features.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended Dell EMC HCI solution includes Dell ProDeployPlus premium installation and deployment services for all included hardware and software. Detailed ProDeployPlus documentation is provided in Advizex's RFP response packet.</p>

4.2.1.153	Vendor provided DC SERVER solution should include OEM premium installation and deployment services for all included hardware and software features.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell DC Server solution includes Dell ProDeployPlus premium installation and deployment services for all included hardware and software. Detailed ProDeployPlus documentation is provided in Advizex's RFP response packet.</p>

4.2.1.154	Vendor provided UDS solution should include OEM premium installation and deployment services for all included hardware and software features.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell EMC UDS solution includes Dell ProDeployPlus premium installation and deployment services for all included hardware and software. Detailed ProDeployPlus documentation is provided in Advizex's RFP response packet.</p>

4.2.1.155	Vendor provided DPS solution should include OEM premium installation and deployment services for all included hardware and software features.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell EMC DPS solution includes Dell ProDeployPlus premium installation and deployment services for all included hardware and software. Detailed ProDeployPlus documentation is provided in Advizex's RFP response packet.</p>

4.2.1.156	Vendor provided NETWORKING solution should include OEM premium installation and deployment services for all included hardware and software features.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and included Dell EMC Networking solution includes Dell ProDeployPlus premium installation and deployment services for all included hardware and software. Detailed ProDeployPlus documentation is provided in Advizex's RFP response packet.</p>

4.2.1.157	Vendor provided Installation services should include OEM delivered planning, best practices design and onsite configuration of all replication technologies including UDS bi-directional replication, DR capabilities, HCI bi-directional guest replication, and DPS bi-directional replication.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended services include:</p> <ul style="list-style-type: none"> • OEM delivered planning • Project Management • Best practice design • Onsite configuration of all replication technologies <p>PowerScale UDS bi-directional replication, PowerScale DR, VxRail HCI bi-directional guest replication with RecoverPoint for VM's and IDPA DPS bi-directional replication for backup data sets.</p>

4.2.1.158	Vendor provided Installation services should include OEM delivered planning, best practices design, and configuration of all UDS advanced data protection software features and services.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended services include OEM delivered planning, project management, best practice design and onsite configuration of all UDS advanced data protection software and features.</p>

4.2.1.159	Vendor provided Installation services should include a minimum of eighty (80) onsite hours of PROJECT MANAGER human resources to assist in project coordination and transition. Note that costs for these services are included in the line item for Installation on the cost sheet.
	<p>Advizex Response: 100% Comply</p> <p>Advizex has included 80 hours of Advizex provided Project Manager human resources to assist with project coordination and transition of all supporting services. Our intent is maintain consistent program management throughout all phases of the project as needed by WVL.</p>

4.2.1.160	Describe in detail how installation services will be completed (on-site support services vs. remote support services) and by whom (Vendor/OEM staff).
	<p>Advizex Response: Advizex has partnered with Dell EMC to provide On-site ProDeployPlus installation services. All Dell EMC installation resources will be Dell Badged, All Dell residency services include Onsite service with Dell Badged Resources. VMware residency services include Onsite delivery with VMware Badged resources. WVL will have the option to allow work to be performed off-site if desired for any reason, but all services provided by Dell and VMWare are priced and recommended as On-site with all travel and expenses covered in the price.</p>

4.2.1.161 to 4.2.1.164 Training Specifications

4.2.1.161	<p>Vendor should provide OEM delivered training credits, pre-paid vouchers, etc., entitling six (6) WVL designated employees each the opportunity for one (1) unique training class with a minimum duration of five (5) training days averaging eight (8) hours per day for HCI solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex has proposed training that include (6) full training subscriptions for OEM Dell EMC and OEM VMware training products. This subscription includes Dell VxRail HCI training of WVL's choice.</p> <p>This Subscription exceeds the requirement of 1 unique HCI training class for six (6) designated employees.</p> <p>This subscription will allow up to \$27,000 worth of training for each of the six(6) employees and include Instructor-led training, Online Instructor led, Video instructor-led, or on-demand open curriculum technology-specific courses. This subscription option greatly exceeds the credit required for four(4) 40-hour classes per employee. Please refer to detailed documentation provided in our response bundle.</p>

4.2.1.162	<p>Vendor should provide OEM delivered training credits, pre-paid vouchers, etc., entitling six (6) WVL designated employees each the opportunity for one (1) unique training class with a minimum duration of five (5) training days averaging eight(8) hours per day for UDS solution.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex has proposed training that include (6) full training subscriptions for OEM Dell EMC and OEM VMware training products. This subscription includes Dell UDS training of WVL's choice.</p> <p>This Subscription exceeds the requirement of 1 unique UDS training class for six (6) designated employees. This subscription will allow up to \$27,000 worth of training for each of the six(6) employees and include Instructor-led training, Online Instructor led, Video instructor-led, or on-demand open curriculum technology-specific courses. This subscription option greatly exceeds the credit</p>

	required for four(4) 40-hour classes per employee. Please refer to detailed documentation provided in our response bundle.
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4.2.1.163	Vendor should provide OEM delivered training credits, pre-paid vouchers, etc. entitling (6) WVL designated employees each the opportunity for 1 unique training class with a minimum duration of five (5) training days averaging eight (8) hours per day for DPS solution.
	<p>Advizex Response: 100% Comply</p> <p>Advizex is recommending and providing (6) six Dell “Full Training” subscriptions to meet the DPS, UDS, and HCI training requirements. In addition, these subscriptions also offer included OEM VMware training.</p> <p>A 1 year subscription is included for each of the six (6) designated WVL employees. This subscription includes:</p> <ul style="list-style-type: none"> • Instructor-led training • Online Instructor led • Video instructor-led <p>or</p> <ul style="list-style-type: none"> • On-demand open curriculum technology-specific courses. <p>This OEM training subscription includes the Entire DELL EMC and VMware training catalog, so WVL can choose the classes that are best for each of the six (6) designated employees.</p> <p>This subscription option exceeds the number of credits required for four(4) 40-hour classes per designated employee.</p> <p>Advizex considers this a great value for WVL, and is pleased to offer this option as an additional benefit to WVL.</p> <p>For more information, please refer to detailed Training Subscription documentation provided in our response bundle.</p>

4.2.1.164	Vendor should provide One Thousand Four Hundred Seven (1,407) VMware service credits (OEM delivered pre-paid services and training) for the purpose of training WVL staff on VMware technology and consulting on VMware products. This will be classroom or virtual live instructor OEM training.
	<p>Advizex Response: 100% Comply</p> <p>Advizex has proposed 1,407 VMware service credits. These can be used for any VMware professional services, or any VMware training.</p>

4.2.1.165 to 4.2.1.169 Migration Specifications

4.2.1.165	Vendor provided hardware solutions should include OEM delivered migration services for all Data, VM guests, and data protection SLA's from existing platforms to new vendor provided platforms.
	<p>Advizex Response: 100% Comply</p> <p>Advizex has proposed services that include OEM delivered migration services for all data, VM guests, and data protection SLA's from existing platforms to the new vendor provided platforms.</p>

4.2.1.166	Vendor provided solution should include OEM delivered data migration services for migration of all WVL guests from current hosts and storage to the new HCI solution.
	<p>Advizex Response: 100% Comply</p> <p>Advizex has proposed services that include OEM delivered migration services for all WVL guests from current hosts and storage to the new HCI VxRail solution(s).</p>

4.2.1.167	<p>Vendor provided solution should include OEM delivered assistance with the process of WORM storage within the UDS solution, with a separate RFP/RFQ to migrate the data from the Centera to the new storage.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex has proposed included services that include OEM delivered migration services for all unstructured data. Object data will need to be converted by the document imaging application to file data prior to migration to the new PowerScale platform. This data conversion will be serviced by a separate RFP/RFQ. OEM assistance with WORM data migration is included and creation of policies for WORM protected storage as well as data retention settings are all included with OEM installation services. All document data will be protected in separate libraries and secured with the OneFS native SmartLock feature. Services will also be provided to establish storage policies for the windows file server shares that are appropriate for each unique use case.</p>

4.2.1.168	<p>Vendor should provide WVL with hourly rate pricing for optional, additional OEM deployment resource services to be ordered at the sole discretion of WVL. The list of functions include (see section f. of the cost sheet):</p> <p>4.2.1.168.1. HCI engineer 4.2.1.168.2. UDS engineer 4.2.1.168.3. DPS engineer 4.2.1.168.4. Project Manager</p> <p>Describe how your solution will meet or exceed these specifications. Include any requirements for minimum block time requirements (Half Day (4 Hours) or Full Day (8 Hours) in your response as well as any discount % for remote support. The cost sheet provides only for recording your standard hourly rate.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex has provided optional OEM badged deployment resources for HCI, UDS, and DPS engineers or Project managers with onsite hourly rates. These OEM skus are available for purchase in increments of eight (8)hours for onsite support, or increments of four (4) hours for remote support. Remote rates will be discounted 17% from the hourly onsite rate found on Section F of the pricing sheet.</p>

4.2.1.169	<p>Vendor and Manufacturer personnel should be able to work flexible hours due to the need for certain maintenance to be performed after business hours. The vendor should not charge higher rates for after hours or emergency services. The quoted hourly rates will be effective for all services. Vendor should be capable of responding on-site within 4 hours in the event of a system failure or maintenance issue.</p>
	<p>Advizex Response: Advizex acknowledges and will comply.</p>

4.2.1.170 to 4.2.1.172 Maintenance Specifications

4.2.1.170	<p>Vendor should provide premium OEM software and hardware maintenance remote installation assistance services for a term of 60 months. Please describe the coverage provided for HCI, UDS, DPS, Server, and networking solutions.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell ProSupportPlus services for HCI, UDS, DPS, Server, and Networking solutions include 60 months of Hardware and Software support and maintenance coverage. This includes installation assistance services, patches, firmware, quick fixes, and proactive support. Additional information is provided in the ProSupportPlus Service description included in our response binder.</p>

4.2.1.171	<p>Vendor should provide premium OEM delivered proactive monitoring, issue detection, notification, and automated case creation for accelerated issue resolution for all hardware solutions provided for a term of sixty (60) months. Describe how your solution will meet this or exceed this specification.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell ProSupportPlus services for HCI, UDS, DPS, Server, and Networking solutions include 60 months of Hardware and Software support and maintenance coverage. This includes proactive monitoring, issue detection, notification, and automated case creation.</p>

	<p>ProSupportPlus includes accelerated access to senior support engineers and a SAM/TAM for assistance.</p> <p>The proactive support will leverage SRS or Support Assist Enterprise – both free services that detect issues, notify, and automate case creation. The proactive alerts will also be delivered via Cloud IQ to WVL and trusted Advisors as push notifications on mobile devices, health status emails, and Dell initiated phone calls or emails to WVL designated employees.</p>
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4.2.1.172	<p>Vendor should provide premium OEM delivered predictive analysis using AI/ML for the purpose of issue prevention and optimization for a term of sixty (60) months. Describe how your solution will meet or exceed this specification.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell ProSupportPlus services for HCI, UDS, DPS, Server, and Networking solutions include 60 months of Hardware and Software support and maintenance coverage. This includes AI/ML issue prevention and optimization services by Dell for the 60 months term. This AI/ML information is exposed to WVL and trusted advisors in CloudIQ which shows predictive analysis and best practice outliers proactively based on the AI/ML analysis.</p>

4.2.1.173 to 4.2.1.182 Support Specifications

4.2.1.173	<p>Your proposed solution should provide for a single point of contact for support with respect to all proposed singular solutions (HCI, UDS, DPS, Networking). Please describe how your solution achieves this objective.</p>
	<p>Advizex Response: The Advizex recommended and provided Dell technical solutions for WVL all include (5) years of ProSupportPlus. Support incidents for this single support contract service level may be entered via Dell Support assist enterprise – a secure remote monitoring, diagnostic, and proactive secure remote connection for the entire solution; or initiated by WVL through a single point of contact with Dell support.</p>

	<p>One of the unique advantages of the Dell solution(s) is the fact that the entire solution (Networking, Server, DPS, HCI, and UDS) including VMware Vsphere hypervisor VSAN, and VCenter for VxRail is supported by the Dell support team. This streamlined approach avoids unnecessary handoffs between hardware and software OEM's for most support. Another major advantage of the ProSupportPlus offering is that it includes a named support account manager (SAM) to help coordinate complex and multiple component support when necessary. Dell ProSupport plus also includes third-party support for many software applications not included in the solutions even if they were purchased elsewhere. A complete Dell EMC solution brings optimization in support consistency and one call support that are powerful advantages for WVL.</p> <p>In the event of a complex, critical, or multiple component incident – the assigned SAM is engaged to help coordinate with WVL and the multiple support engineers to ensure that all parties work together towards complete incident resolution. Should the case need to be escalated further because of unique technical complexity or severity, a resolution manager or critsit will also be engaged to help coordinate resources, work with the SAM and make sure all support milestones are kept while keeping the customer in communication along the way until resolution.</p>
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4.2.1.174	Vendor should have, and should commit, to maintain for the term of this contract, W-2 employed staff members experienced and qualified to support all technologies utilized in the systems as outlined.
	<p>Advizex Response: Advizex acknowledges and will comply.</p>

4.2.1.175	Your proposed solution should include a plan for OEM Residency Services (dedicated on-site support) and off-site support during the life cycle of the project. Please describe in detail such plan.
	<p>Advizex Response: 100% Comply Advizex recommends and has provided for OEM Onsite residency services in the following amounts:</p> <ul style="list-style-type: none"> • HCI (3) months or approximately 480 hours • UDS (2) months or approximately 320 hours • DPS (1) month or approximately 160 hours

	<ul style="list-style-type: none"> • VMWare (3) months or approximately 480 hours <p>WVL has the option to extend these residency services as needed for additional cost. (Not included)</p> <p>Advizex has also provided for Additional OEM badged resources in onsite increments of 8 hours, or offsite increments of 4 hours as needed.</p> <p>In addition, Advizex has proposed hourly rates for Advizex Badged and certified resources for the life of the solution. Detailed Statement of work and services contracts will be established upon award between WVL and Advizex that best meet WVL's unique needs.</p>
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4.2.1.176	<p>4.2.1.176. The Vendor should provide OEM staff, or OEM badged contract staff, for on-site post deployment services (residency) for each of the major sub-systems (HCI/DPS/UDSNMware) as requested in this RFP:</p> <ul style="list-style-type: none"> • 4.2.1.176.1 HCI — 3 months (OEM equipment solution provider) • 4.2.1.176.2 DPS —1 month (OEM equipment solution provider) • 4.2.1.176.3 UDS — 2 months (OEM equipment solution provider) • 4.2.1.176.4 VMware — 3 months (OEM product solution provider) <p>Note: OEM badged contract staff could be a bidding vendor, or a third-party contractor that contracts with vendor because of specialized knowledge. This is common where a vendor specializes in several manufacturers rather than any available manufacturers. It is common in the industry for the OEM to provide badges to these preferred vendors and the OEM will stand behind the work being done by the Vendor, which benefits the Lottery.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex recommends and has provided for OEM Onsite residency services in the following amounts: HCI (3) months or approximately 480 hours UDS (2) months or approximately 320 hours DPS (1) month or approximately 160 hours VMWare (3) months or approximately 480 hours</p> <p>Advizex is recommending and providing OEM badged staff which may or may not be contracted by the OEM depending on available resources. The OEM will remain responsible and will stand behind the work being done by their OEM badged residents.</p>

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4.2.1.177	The Vendor should provide ongoing support services for the life of the support contract (sixty (60) months. Support services will be required for incident/problem management of migrated services including but not limited to Active Directory, SQL Server, Exchange Server, VCenter etc. These will be subject to the hourly rates quoted in the response to this RFP.
	<p>Advizex Response: 100% Comply</p> <p>Prior to the project completion, Advizex will meet with WVL stakeholders to discuss the handoff of all "As Built" documentation and the smooth handoff of all post-implementation support, technical reporting and escalation processes, and the consideration of "Spot Health Checks" to validate expected performance and identify any areas of concern.</p> <p>Part of this process includes establishing a trouble call or service request generation process for WVL to follow.</p> <p>A Statement of Work will be generated to provide these ongoing support services of incident/problem management of migrated services of WVL's choosing at the hourly rates quoted in Advizex' response to this RFP for (60) sixty months.</p>

4.2.1.178	Original equipment manufacturer (OEM) for each major component of this solution: HCI, DPS, and UDS should provide badged (W-2) employees for the project.
	<p>Advizex Response: 100% Comply</p> <p>Dell OEM will provide badged (W-2) resources for each major component of this project; HCI, DPS, and UDS.</p>

4.2.1.179	<p>Vendor should provide OEM delivered third party software support for eligible software installed on any of the vendor provided solutions as a response to this RFP for the base contract term of 60 months. Describe how your solution will meet this specification. This might include third party software installed by the Vendor or OEM, an example could be Ransomware protection.</p>
	<p>Advizex Response: 100% Comply</p> <p>The Advizex provided UDS solution includes Ransomware protection for Powerscale, as well as OEM software installation for that product.</p> <p>The Advizex recommended and provided Dell ProSupportPlus services for HCI, UDS, DPS, Server, and Networking solutions include 60 months of Hardware and Software support and maintenance coverage.</p> <p>Dell ProSupportPlus also includes third-party coordination of support services for many software manufacturers such as Microsoft, Red Hat or VMware. Dell will support any of WVL's eligible Third-party software even if they were not purchased from Dell. Dell will diagnose the issue and own the issue through resolution.</p>

4.2.1.180	<p>The Vendor should acquire an OEM-provided Technical Account Manager (TAM) for a term of 60 months. Please describe what this advocate for the Lottery will provide.</p>
	<p>Advizex Response: 100% Comply</p> <p>The included ProSupportPlus offering for all Dell products includes a named Technical account manager (TAM) or Support Account Manager (SAM) to help coordinate complex and multiple component support when necessary.</p> <p>The TAM or SAM is a named dedicated resource for WVL that helps with reporting, monthly health checks, SW collaborative support, and system maintenance recommendations.</p> <p>The SAM/TAM will be a familiar, consistent customer advocate for WVL that provides a tighter integration between WVL and Dell support services.</p> <p>In the event of a complex, critical, or multiple component incident – the assigned SAM or TAM is engaged to help coordinate with WVL and the multiple support teams to ensure that all parties work together towards complete incident resolution.</p> <p>Should the case need to be escalated further because of unique technical complexity or severity, a resolution manager will also be engaged to help coordinate resources, work with the SAM/TAM and make sure all support milestones are kept while keeping the customer in communication along the way until resolution.</p>

4.2.1.181	<p>All systems and networking tasks should be provided onsite unless approved by the West Virginia Lottery Management. During support hours, Vendor should be capable of providing support response within a four-hours (onsite) at both sites.</p> <p>Support Hours are Monday through Friday 8-5 PM. EST. During non-support hours, response by phone should be made within 4 hours of notification.</p> <p>This should be for a term of sixty (60) months.</p> <p>Response: The Advizex recommended and provided Dell ProSupportPlus Mission Critical services for HCI, UDS, DPS, Server, and Networking solutions include 60 months of Hardware and Software support and maintenance coverage. The included mission critical designation offers WVL a 4 hour response SLA's 24x7x365.</p> <p>Onsite response is included for all hardware components, typically with 4 hour onsite response after telephone based troubleshooting is completed. WVL can select to open support cases with a variety of severity levels and response times as appropriate for the actual issue and support needed. For Example Severity 1 incidents are eligible for a quick escalation/resolution manager and "Crisit" incident coverage with emergency dispatch of onsite service technician in parallel with immediate phone-based troubleshooting.</p> <p>For support requests or project work outside the scope of Dell EMC support responsibilities, Advizex will include SLAs meeting WVL requirements in the MSA and services contracts developed to govern our support agreement with a term of no less than sixty (60) months.</p> <p>Advizex has included Onsite rates on the pricing page section e. "As Needed Vendor Support". Advizex also has help desk managed services offerings and seeks to establish a contract with WVL that is best tailored to WVL's needs. Advizex will provide four (4) hour response as requested with support services.</p> <p>Remote vendor support will be available at a 13% discount from the listed rates on the cost sheet.</p>
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4.2.1.182	<p>Vendor should provide hourly rates for ongoing support, as requested by the Lottery, including, but not limited to Exchange/SQL/Active Directory/Operating Systems. The Vendor should assist with system design, implementation, and testing related to Applications transition services (from current OS software levels to current levels) and disaster recover activities for WVL. This will have a primary emphasis on the DPS sub-system for the disaster recovery component.</p> <p>These activities will require an approved Statement of Work (SOW) utilizing the established contract hourly rates. An Agency Delivery Order (ADO) against the contract established by this RFP (Master Agreement), will be issued and will be used for billing post-installation maintenance/support activities based on an established hourly rate as needed during the duration of this five (5) year project:</p> <p>The Rates will be defined for the following positions: 4.2.1.182.1. 4.2.1.182.2. 4.2.1.182.3. 4.2.1.182.4. 4.2.1.182.5. 4.2.1.182.6. 4.2.1.182.7.</p> <ul style="list-style-type: none"> • Project Management • Exchange Engineer • SQL Engineer • Operating System Specialist Engineer • Active Directory Engineer • Networking Engineer • Other Staff
	<p>Advizex Response: 100% Comply</p> <p>Advizex has reviewed the above requirements and propose the following roles for the duration of this five (5) year engagement. Rates are provided on the WVL pricing page. An approved Statement of Work will be established utilizing the established contract rates. Advizex understands that an Agency Delivery Order (ADO) against the Master Services Agreement will be used and billing will be completed post-installation maintenance/support activities governed by these contractual agreements.</p> <p>The proposed pricing includes Project Management, Exchange Engineer, SQL Engineer, Operating System Specialist Engineer, Active Directory Engineer, and Networking Engineer.</p>

4.2.1.183 Erasure Specifications

	<p>Vendor should provide for certified, documented, data erasure services, packaging, transportation, and disposal for all components comprising two (2) ENC VNX5300 storage arrays and two (2) EMC Centera storage arrays. One of each system should be packed, picked up and transported from each of WVL's data center locations.</p>
4.2.1.183	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended and provided Dell-EMC services include Dell provided certified data erasure and removal for WVL's (2) VNX5300, (2) Centera, and (2) Data Domain. These services include certified erasure, packing, and transportation from each WVL data center location.</p>

4.2.2 MANDATORY REQUIREMENTS

MANDATORY PROJECT REQUIREMENTS

The following mandatory requirements relate to the goals and objectives and must be met by the Vendor as a part of its submitted proposal. Vendor must describe how it will comply with the mandatory requirements and include any areas where its proposed solution exceeds the mandatory requirement. Failure to comply with mandatory requirements will lead to disqualification, but the approach/methodology that the vendor uses to comply, and areas where the mandatory requirements are exceeded, should be explained. The mandatory project requirements are listed below.

NOTE: Vendor is to describe in detail (in writing) its approach and methodology to meet or exceed every objective documented in the Project Specifications as well as those requirements below. This includes sections 4.2.2 through 4.3.

4.2.2.1	<p>Vendor must transfer ownership of all hardware/software licenses and maintenance contracts to the West Virginia Lottery. This shall allow the Lottery to contact the hardware/software OEM directly for support.</p> <p>Advizex Response: 100% Comply</p> <p>Advizex will transfer ownership of all hardware/software licenses, maintenance contracts, and services entitlement to West Virginia Lottery upon shipment from OEM.</p> <p>WVL will be able to contact the OEM directly for support, or OEM installation resources or residents may obtain escalated case performance on behalf of WVL.</p>
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4.2.2.2	<p>The Lottery reserves the right to approve all staff members assigned to perform Lottery services. The Lottery reserves the right to reject staff and the Vendor/Manufacturer will provide qualified replacements.</p> <p>Advizex Response: Advizex acknowledges and will comply.</p>
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	Vendor must provide two (2) data center HCI, DPS, UDS and Networking solutions, one to be installed in the WV Lottery primary data center, and the second identical solution to be installed in the WV Lottery secondary data center.
4.2.2.3	<p>Advizex Response: 100% Comply</p> <p>The Advizex is providing (2) identical data center solutions including HCI, DPS, UDS, and networking solutions. One will be installed in Charleston, and one in Bridgeport.</p>

	The Vendor must include a detailed bill of materials (BOM) that details each billable component of this RFP. This must be provided to document the hardware/software and services to be provided at each data center, and the response must include OEM professional services descriptions that clearly provide the advanced level of support requested by the lottery. The Professional Services Descriptions must be cross referenced to the applicable line item(s). A second identical copy, with prices for each billable item, will be included with the cost bid.
4.2.2.4	<p>Advizex Response: 100% Comply</p> <p>Advizex has provided a complete Bill of Materials without pricing in the technical response, and the same identical Bill of Materials with pricing will be with the pricing page.</p>

	Server based Microsoft operating systems, Exchange and SQL software licensing costs are not included in this project but will be provide by the lottery. Vendors proposing an alternate solution, or virtualization platforms, must include licensing, maintenance and support costs if a separate product is being proposed
4.2.2.5	<p>Advizex Response: Advizex acknowledges and will comply. No alternate, separate, or additional software licenses are included or required with our recommended solution. Our solution is designed to best fit into the West Virginia Lottery Requirements without unintended changes.</p>

HCI/UDS/DPS/NETWORKING/PHYSICAL SERVERS MANDATORY REQUIREMENTS

No mandatory requirements.

INSTALLATION MANDATORY REQUIREMENTS

No mandatory requirements.

TRAINING MANDATORY REQUIREMENTS

No mandatory requirements.

MIGRATION REQUIREMENTS

4.2.2.7	<p>Vendor must provide OEM Transition Services for application transition and re-platforming, or any other work designated by the WVL on an as needed basis and will bill hours provided each month. Separate invoices must be provided for work done for the WVL including activity detail, including date, hours worked, employee name and a reference to the applicable statement of work (SOW).</p> <p>Advizex Response: 100% Comply</p> <p>Advizex is recommending and including OEM residency services to assist as needed for OEM support during the application transition and re-platforming phase of this project. Advizex professional services performing the application and re-platforming services will work with Dell EMC, our sole hardware partner for this proposal will ensure OEM best practices are followed and will bill for these services activity detail, date, hours, name, and statement of work reference.</p>
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4.2.2.8	<p>Vendor provided application transition services must plan, document, and implement best practices AD domain controller upgrades, functional level modernization, and AD service best practices and policies for modernization of Microsoft client management features, printing, and deployment.</p> <p>Advizex Response: 100% Comply</p> <p>Advizex acknowledges and will provide requested services with their resources.</p>
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4.2.2.9	Vendor must provide project management services for the entirety of the project. Project manager services must be assigned to full time badged employees of the winning Vendor and in partnership with all OEM providers.
	<p>Advizex Response: 100% Comply</p> <p>Advizex will provide PM services for the entirety of the project. The assignment will be to a full time badged Advizex employee and the assigned manager will partner with OEM PMs to deliver a consistent, seamless PM experience to WVL.</p>

4.2.2.10	Vendor must acquire OEM project management services for all migration requirements. Project management services must be assigned to full time badged employees of the OEM and work in partnership with the vendor.
	<p>Advizex Response: 100% Comply</p> <p>All OEM deployments and migration services will include OEM badged PM services. Advizex will assign a project manager to perform program management and to be the central contact for all OEM and vendor led project items.</p>

4.2.2.11	Vendor provided application transition services must assist WVL with modernization of other non-Microsoft application server products — including evaluation, planning, implementation, and support coordination with OEM of application. This is expected to include but not be limited to application requirements, assessment, operating system configuration, database server configuration, and or application server configuration. See Appendix II for an inventory of servers/storage to be upgraded.
	<p>Advizex Response: 100% Comply</p> <p>Advizex acknowledges and will provide assistance with modernization of all requested applications to include evaluation, planning, implementation, and support coordination with the OEM of the application. Advizex will match the best qualified resources for all expectations and charge as needed against our SOW for application transition services.</p>

4.2.2.12	All Vendor(s) must submit documentation for all employees, upon Lottery Request, that will be assigned to work on Lottery Systems. All employees will be required to submit fingerprints for background investigation performed by the Lottery. Anyone failing a background check will not be able to work on this Project.
	Advizex Response: Advizex acknowledges and will comply.

4.2.2.13	The winning Vendor must provide services and support for server buildouts and migrations/transitions from Server 2008 to new Windows Server 20xx platforms including but not limited to Clustered Exchange 20xx, Clustered SQL 201x, note Document Imaging and SharePoint will not be included in these migrations. See Appendix II for an inventory of servers/storage to be upgraded.
	Advizex Response: Advizex acknowledges and will provide the requested services. Advizex has a very strong Microsoft services practice and will provide services as requested and governed by our SOW and MSA.

MAINTENANCE REQUIREMENTS

4.2.2.14	Vendor must provide premium OEM software and hardware maintenance services entitling WVL to but not limited to all supported software releases for all provided hardware and software including but not limited to HCI, UDS, DPS, Server, and networking solutions for a term of sixty (60) months.
	Advizex Response: 100% Comply The Advizex recommended solution includes ProSupportPlus Premium OEM software and hardware support services for all products for a term of 60 months from date of delivery. Included in ProSupportPlus is software maintenance entitling WVL to all supported software releases for the entire solution including HCI, UDS, DPS, Servers and networking for 60 months.

SUPPORT REQUIREMENTS

4.2.2.15	Vendor must provide premium-OEM software and hardware support services for all proposed hardware and software solutions as a response to this RFP entitling WVL to 24x7 remote technical support for a term of sixty (60) months.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes ProSupportPlus Premium OEM software and hardware support services for all products for a term of 60 months from date of delivery. The 24x7 4Hr Mission critical remote technical support option is included for all solutions (MC). Please refer to the Dell ProSupportPlus documentation attached to the response bundle for details.</p>

4.2.2.16	Vendor must provide premium OEM software and hardware support services for all proposed hardware and software solutions as a response to this RFP entitling WVL to four (4) hour mission critical onsite response technical support for a term of sixty (60) months.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes ProSupportPlus Premium OEM software and hardware support services for all products for a term of 60 months from date of delivery. The 4Hr Mission critical response option is included for all solutions (MC). Please refer to the Dell ProSupportPlus documentation attached to the response bundle for details.</p>

4.2.2.17	Vendor must provide premium OEM software and hardware support services for all proposed hardware and software solutions as a response to this RFP entitling WVL to priority access to specialized technical support for sixty (60) months.
	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended solution includes ProSupportPlus Premium OEM software and hardware support services for all products for a term of 60 months from date of delivery. ProSupport Plus that is included with all solutions includes priority access to specialized technical support for 60 months.</p>

4.2.2.18	<p>WV lottery is seeking a vendor to assist with application transition activities and related support actions to ensure that WVL's Active Directory, SQL Server, Exchange Server, and other dependent applications are implemented on modern, supported and supportable operating systems, platforms, servers, or systems including the following requirements:</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex is proposing hourly rates for our PS resources who are experienced and capable to assist WVL with application transition activities, and relation support actions to help WVL migrate Active Directory, SQL Server, Exchange, and other applications. Advizex will help WVL transition these applications and servers to modern, supported operating systems, servers, and platforms.</p>

4.2.2.18.1	<p>The vendor awarded this RFP must be able to perform these activities and actions with employees badged by the RFP responding vendor, unless the requirement is for OEM employees.</p> <p>Applications include 120+ databases on the SQL server, supporting Lottery Systems, such as Licensing, Security, Finance, Document Imaging (Open Text Application Extender), SharePoint, Microsoft Great Plains Accounting System, Scribe for Great Plains, and a number of smaller IT oriented applications. The project will include detail planning for the upgrade of the Virtual guests and dependent applications. The requirement is for staff that are permanent employees of the Vendor. The use of sub-contractors to provide direct services is prohibited. However, the use of a sub-contractor to provide guidance to Vendor staff is not prohibited. Such sub-contractors will not have contact with Lottery staff and the Vendor is solely responsible for their performance.</p>
	<p>Advizex Response: 100% Comply</p> <p>Advizex understands the security implications of Lottery Systems and will provide Full time resources for all direct services. If sub-contracted resources are used to provide guidance to Advizex staff, they will not have contact with Lottery staff and Advizex will remain responsible for their performance. Advizex seeks to establish a MSA and Statement of work with WVL to govern and document these requirements for mutual benefit.</p>

	<p>This contract must provide for vendor professional services for system design, implementation, and disaster recovery activities for WVL, and will require an approved SOW utilizing the established contract hourly rates for each defined project. A separate contract release order will be issued and will be used for billing post-installation maintenance/support activities based on an established hourly rate.</p>
4.2.2.18.2	<p>Advizex Response: 100% Comply</p> <p>Advizex seeks to establish an approved SOW with WVL using the established contract hourly rates for each defined project. This SOW and MSA will be used for professional services for system design, implementation, and disaster recovery activities for WVL. Advizex understands that a separate contract release order will be issued and used for billing post activity.</p>

	<p>The Server based VMware sub-system (VMware, vCenter, vMotion, and vSphere) programs are currently licensed to the Lottery and will continue to be used as applications are migrated from legacy to new platforms. Any proposal that increases the number of required licenses, must include costs for VMware software for the duration of this contract (sixty (60) months).</p>
4.2.2.18.3	<p>Advizex Response: 100% Comply</p> <p>The Advizex recommended VxRail solution is matched to the Vsphere, Vmotion, and Vcenter licenses that WVL currently owns and has maintenance on. The VMware HCI solution has been sized to meet current and application transition workloads without requiring additional VMware licenses.</p>

4.3 QUALIFICATIONS AND EXPERIENCE

GENERAL QUALIFICATIONS AND EXPERIENCE

Advizex maintains a large pool of skilled and certified technical resources that provides services to multiple industries as well as state and local agencies.

We currently hold state-wide procurement contracts with the following states and agencies within each state:

State/ Number of State-wide Contracts	In-State Agencies and Departments
Ohio (5 STS state-wide contracts)	12+
Pennsylvania (3 state-wide contracts)	4+
New York State (2 OGS state-wide contracts)	4+
Massachusetts (8 IT state-wide contracts)	38+
Maine	4+
Connecticut	7+
Rhode Island	3+
Tennessee	2+

As part of these contracts, strict Nondisclosure Agreements (NDA) are in force. Your Account Executive, Mika Munoz, will facilitate reference discussions with both state-level contacts and similar technology and size secular clients, upon request

When considering our Microsoft capabilities, the experience, expertise and reference perspectives of Advizex include depth in capabilities.

Advizex has previously delivered on every aspect of what West Virginia Lottery is looking to accomplish for this initiative.

As an example, Advizex has designed, installed, upgraded, configured, implemented and/or migrated multiple SQL (2000-2014) and Exchange 2000-2019 environments. These environments were across a variety of client base industry verticals and in support of organizations with anywhere from hundreds to thousands of users.

These prior projects have been on both dedicated physical hardware environments as well as virtual.

As a fully qualified and certified (since 2006) Microsoft Gold Partner, we have successfully delivered on hundreds of projects related to:

- Data center upgrades
- Consolidation and migration efforts
 - Active Directory
 - AD core services (DNS, DHCP, CA)
 - Identity
 - Security
 - ... and more
- Microsoft Core Applications
 - Exchange
 - SharePoint
 - SQL
 - O365
 - And more...

Our technical team has extensive hands on working knowledge assessing, designing, troubleshooting, upgrading, consolidating and migration of those systems.

We've successfully dealt with the complexities that, often times, come with legacy data center upgrades.

While Advizex provides services work across all industry verticals, we have a working knowledge and understanding of a variety of state and local governments, and their supporting agencies. Some of these engagements include:

- Job and Family Services
- DOT
- Lottery Commissions
- City Municipalities
- 911 Services
- Judicial Departments
- Cannabis Commissions
- And more...

4.3.1.1	<p>Vendor should have experience with, and a thorough understanding of, all power requirements and connector specifications for all types of equipment in the data center not limited to switches, Servers, storage, fiber specs, and types, 120/240 Power and PDU.</p>
	<p>Advizex Response: Advizex has performed Data Center new implementations, migrations, and platform upgrades for over (2) decades. Most importantly, a majority of the time has been spent with the assessment of production systems in the Data Center, design of the new solution, and validation by the OEM. Adept planning has simplified implementation greatly. We work closely with facilities for clear power requirements to the Data Center itself, locations, and the service termination types required.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

4.3.1.2	<p>Vendor should be able to professionally install hardware cabling and power systems into server equipment racks and cable tray systems and terminate connections in a clean, organized and professionally labeled manner including but not limited to CAT 5/6 (All Fiber types), etc.</p>
	<p>Advizex Response: Advizex has performed Data Center new implementations, migrations, and platform upgrades for over (2) decades. These types of engagements included the implementation of rack systems, their associated hardware, power connections, and cabling.</p> <p>We do rely upon OSHA cable plant installations to be fire code and construction code compliance, but either perform or work closely with client resources for Data Center cabling needs.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

4.3.1.3	Vendor should have Project Management resources with hands on experience in Multiple Technical Areas including Data, Data Network Security, Distributed Systems, and Clustered Applications.
	<p>Advizex Response: Advizex has performed Project Management services over a broad scope of IT systems and platforms; including the scope of products and platforms stated above.</p> <p>We have provided a sample of certified Project Managers, PMI, PMP, Agile, and Scrum, technical biographies in Appendix B of this submission.</p>

4.3.1.4	Vendor should provide recent reference examples with customer name omitted that prove successful Microsoft Application Transition Services.
	<p>Advizex Response: While Advizex provides services work across all industry verticals, we have a working knowledge and understanding of a variety of state and local governments, and their supporting agencies. Some of these Microsoft Application Services engagements have taken place at the following agencies:</p> <ul style="list-style-type: none"> • Job and Family Services • DOT • Lottery Commissions • City Municipalities • 911 Services • Judicial Departments • Cannabis Commissions • And more...

4.3.1.5	Vendor should have installed, configured, and implemented Clustered Microsoft SQL Server 2008 or later and Clustered Microsoft Exchange 2013 or later in both physical and virtual environments.
	<p>Advizex Response: Advizex has performed a broad scope of Microsoft platform services for over (20) twenty years. These services include those that requested above.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

4.3.1.6	<p>Vendor badged employees should be qualified and certified with Microsoft Active Directory, Microsoft Radius Authentication Server, Exchange, SQL Disaster Recovery, SharePoint, Clustering Services, and Unified Communications.</p>
	<p>Advizex Response: Advizex has performed a broad scope of Microsoft platform services for over (20) twenty years. These services include those that requested above.</p> <p>All of our Microsoft Consultants have at least (2) two MCSE certifications each.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

4.3.1.7	<p>Vendor should have Badged Employees with the following certifications: MCSE on Windows Server 2012 or later, Exchange 2013 or later, and SQL Server 2012 or later. Resumes, references documenting at least three years full time experience with any of these products may be considered as equivalent certification.</p>
	<p>Advizex Response: Advizex has performed a broad scope of Microsoft platform services for over (20) twenty years. These services include those that requested above.</p> <p>All of our Microsoft Consultants have at least (2) two MCSE certifications each.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

4.3.1.8	<p>Vendor should have badged employees with significant security experience, including but not limited to certification as a CISM or CIS SP.</p>
	<p>Advizex Response: Advizex has multiple consultants with security certifications; including CISM and CISSP. We will comply where CISM and CISSP levels of security are deemed necessary by WVL.</p>

4.3.1.9	<p>Vendor should have assignable employees with primary skills in Data Center infrastructure design, maintenance, and migration. Capabilities should include Windows Servers, Cisco Core Networking, Cisco Firewalls, Routers, and Switches, as well as the RFP responding OEM provided HCI, UDS, DPS, Server, and Networking solutions.</p>
	<p>Advizex Response: Advizex has performed a broad scope of infrastructure services for over (30) thirty years. These services include those that requested above.</p> <p>More importantly, Advizex has been a Dell / Dell EMC Titanium Partner for over (15) fifteen years. A more detailed list of all of our OEM partnerships can be found on page 3 of this submission; Dell, EMC, HPE, Cisco, Aruba, and more.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

4.3.1.10	<p>Vendor should have experience implementing best practices with Vsphere 6.7 or later in a multi-site environment. Experience should include experience in planning, creating, managing, and assigning necessary virtual resources such as storage, compute, and network for the purpose of deploying and managing virtualized Servers as required.</p>
	<p>Advizex Response: Advizex has performed a broad scope of VMware services and consulting for over (15) fifteen years. These services include those that requested above.</p> <p>Our technical team consists of published VMware experts, participates on active VMware technical advisory councils, leads multiple VMware user groups, and maintains their skill sets with the latest VMware products and certifications.</p> <p>We have been recognized multiple times for excellence in VMware capabilities. These awards can be found on page 3 of this submission.</p> <p>In an effort to demonstrate our capabilities and experience, we have provided a large sample of technical biographies for your review. These can be found in Appendix C of this submission.</p>

	<p>Vendor should have provided professional services installing, configuring, and migrating and implementing Microsoft Active Directory environments on Server 2012 or later. This environment should include multiple locations using site to site replication on at least four (4) Domain Controllers. This environment should have included both Physical and Virtual Domain Controllers. This work should have been for an agency or company of more than 100 users.</p> <p>Advizex Response: Advizex has been a Microsoft Certified Gold Partner for over fifteen(15) years and continues to provide Advanced Professional Services.</p> <p>The scope of our practice includes the following:</p> <ul style="list-style-type: none"> • Cloud Productivity – Azure & O365 • Directory & Identity Management • Messaging & Communications – Exchange/Skype • Infrastructure Management – Virtualization/System Center • Portals & Collaboration – SharePoint/Teams/Yammer/VSTeams <p>4.3.1.11 Our current certifications and competencies include the following:</p> <ul style="list-style-type: none"> • GOLD <ul style="list-style-type: none"> ○ Cloud Productivity (Office 365) ○ Cloud Platform (Azure) ○ Collaboration and Content (SharePoint) ○ Data Center (AD/Server/Identity) • SILVER <ul style="list-style-type: none"> ○ Windows and Devices (Client Platform) ○ Data Analytics (SQL and Power BI) • TEAM QUALIFICATIONS <ul style="list-style-type: none"> ○ Microsoft Certified Professionals (MCP's) ○ Microsoft Certified IT Professionals (MCITP's, MCSE, MCSA) <p>We are fully capable and comfortable performing the services you have requested.</p>
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4.3.1.12	<p>Vendor should be able to provide ongoing Microsoft Professional Consulting Services for the West Virginia Lottery (WVL) on an as needed basis.</p>
	<p>Advizex Response: As demonstrated in question 4.3.1.11, Advizex offers multiple advanced Microsoft capabilities.</p> <p>Our corporate mantra is “Customers for Life”. Our engagement with WVL extends far past the one proposed in this submission.</p> <p>We look forward to a long-term relationship with WVL and providing ongoing Microsoft Professional Consulting.</p>

4.3.1.13	<p>Vendor should provide detail for its staffing plans for on-site installation, configuration, and residency services by including line items on the BOM sheet accompanied by OEM service descriptions as part of your response.</p>
	<p>Advizex Response: 100% Comply</p> <p>Per the RFP requirements, Advizex is supplying Dell OEM ProDeployPlus and ProDeployPLUS add-on services where applicable. In addition, Advizex is providing Dell OEM on-site residency services in the amount of 3 months for HCI, 3Months for VMware, 2 months for UDS, and 1 Month for DPS. The staffing for on-site installation, configuration, and Dell OEM Residency services will be provided by DELL-EMC after the orders are placed.</p> <p>Resume’s will be provided for residents prior to assignment. Advizex will also provide program management resources throughout the entire project from planning through completion of all phases.</p> <p>These program management resources will assist in coordination of all project aspects and will directly engage with Dell-EMC project managers to simplify and consolidate requests for WVL staff and other resources.</p>

MANDATORY QUALIFICATIONS

4.3.2.1	<p>Vendor must be a Microsoft Certified Gold partner with Technical certification in the Microsoft defined "Datacenter" competency.</p> <p>Advizex Response: Advizex has been a Microsoft Certified Gold Partner for over fifteen(15) years and continues to provide Advanced Professional Services.</p> <p>The scope of our practice includes the following:</p> <ul style="list-style-type: none"> • Cloud Productivity – Azure & O365 • Directory & Identity Management • Messaging & Communications – Exchange/Skype • Infrastructure Management – Virtualization/System Center • Portals & Collaboration – SharePoint/Teams/Yammer/VSTeams <p>Our current certifications and competencies include the following:</p> <ul style="list-style-type: none"> • GOLD <ul style="list-style-type: none"> ○ Cloud Productivity (Office 365) ○ Cloud Platform (Azure) ○ Collaboration and Content (SharePoint) ○ Data Center (AD/Server/Identity) • SILVER <ul style="list-style-type: none"> ○ Windows and Devices (Client Platform) ○ Data Analytics (SQL and Power BI) • TEAM QUALIFICATIONS <ul style="list-style-type: none"> ○ Microsoft Certified Professionals (MCP's) ○ Microsoft Certified IT Professionals (MCITP's, MCSE, MCSA) <p>We are fully capable and comfortable performing the services you have requested.</p>
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APPENDIX A – CERTIFICATE OF INSURANCE

Client#: 160037

ROLTADV

ACORD™

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/18/2021

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

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

PRODUCER CBIZ Insurance Services, Inc. 6050 Oak Tree Blvd., South #500 Cleveland, OH 44131	CONTACT NAME: Erika Schabo		FAX (A/C, No): 216-447-9007
	PHONE (A/C, No, Ext): 216-447-9000		
	E-MAIL ADDRESS: elahti@cbiz.com		
INSURED AdvizeX Technologies, LLC 6480 Rockside Woods Blvd. S Suite 190 Cleveland, OH 44131	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A : Phoenix Insurance Co.		25623
	INSURER B : Travelers Prop. Cas. Co. of America		25674
	INSURER C : Hartford Insurance		
	INSURER D :		
	INSURER E :		
INSURER F :			

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

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

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		6301S684339	05/01/2021	05/01/2022	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
A	<input type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		BA1S687237	05/01/2021	05/01/2022	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$10,000		CUP1S687458	05/01/2021	05/01/2022	EACH OCCURRENCE \$15,000,000 AGGREGATE \$15,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input checked="" type="checkbox"/> N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	45WECAA7S8F	11/01/2020	11/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Mark A. Stutz

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APPENDIX B – PROJECT MANAGER BIOGRAPHIES

Accomplished, collaborative and results-driven IT leader with an 18 year proven track record of delivering outstanding results and business enablement. Valued member of senior leadership team with diverse experience including application development, infrastructure and operations. Trusted partner and high performer demonstrating the ability to construct peak-performing teams to deliver cross-functional business objectives. Delivering business value and change adoption by leading cross functional teams in the implementation of critical initiatives.

CORE STRENGTHS

- | | | | |
|--------------------------------|------------------------|----------------------------|--------------------------------|
| • Collaborative & Decisive | • Planning & Execution | • Problem Solving | • Time & Resource Optimization |
| • Strong Communication | • Incident Management | • Change Management | • Associate Engagement |
| • Leadership & Team Building | • Vendor Management | • Operational Change Agent | • Fiscal Management |
| • Results Oriented & Proactive | • Root Cause Analysis | • Process Improvement | • Operations Management |

AREAS OF EXPERTISE

Team Building

- Focused on superior delivery and customer satisfaction through associate training, mentoring, structured growth plans, engagement and empowerment.
- Successfully merged several disparate groups into single highly functional, collaborative and accountable teams.
- Keen ability to empathize with my team and my peers to leverage strengths and diminish weaknesses.

Financial Management

- Extensive history of direct responsibility for planning and allocation of capital and expense budgets.
- Vendor management including contracts, negotiations, service level accountability and consolidation.

Management

- Managed teams of 50+ employees and consultants including onsite, onshore and offshore.
- Comfortable with ambiguity and foster an environment of change by communicating strategy and empowering delivery through prioritization.

Process Improvement

- Created an IT Operations team focused on system uptime and availability, production code deployments and standardization creating availability for application development and alleviating any segregation of duties risks.
- Worked directly with IT and business leaders to resolve technical and process issues leading to reduced incidents, problems and service desk points-of-contact.
- Instilled detailed resource and financial planning, capital and expense forecasting and tracking.

PROFESSIONAL EXPERIENCE

DSW, INC. – Columbus, Ohio

2007-2019

Senior Director IT Operations (2015-2019)

Responsibility for providing leadership, strategy and financial management for IT Operations organization servicing 500+ retail locations, digital commerce, 10,000+ employees, two data centers, 2500+ servers, storage, backups, IT service management, code deployment, system availability and the corporate office.

- **Financial Management:** Direct responsibility for \$15 million annual capital and expense budget. Implemented a new storage array across two data centers in four months with a 30-month ROI leading to annual expense save of \$475,000. Consolidated storage implementation partners saving \$400,000 in professional services annually.

DSW, INC. – continued...

- **Leadership:** Created DSW's IT Operations team as a separate entity from Infrastructure. On-boarded an offsite 3rd party support organization providing overnight Tier I / II support as well as system patch management. Moved enterprise to a 30-day OS and application patch cycle. Implemented a Dev Ops practice supporting DSW's digital initiatives and segregation of duties across critical systems. Maintain PCI, SOx and FTC compliance. Implemented improved metrics, reporting and accountability throughout all production systems leading to a 25% decline in incidents over one year. A member of IT senior leadership reporting directly to CIO.
- **Large project initiatives:** Storage array migration. Implementation of a 700 server dual data center capacity initiative increasing redundancy, reducing risk and adding seven complete environments within six months. Put into effect a broad use of Microsoft System Center Configuration and Operations Manager supporting all corporate Windows servers and in-store Windows systems.

Senior Director Store, eCommerce and Corporate Systems (2014-2015)

Responsible for application development including store and digital selling channels, corporate applications and in-store infrastructure.

- **Management:** Directed a team of 40+ associates. Successfully merged all of DSW's sales channels into a single application development and support organization supporting annual revenue of \$2.6 billion.
- **Leadership:** Extensive interaction with executive leadership committee, Board of Directors Technology Committee and senior business and IT leaders. Key stakeholder in developing IT operational support contract with new payment processor including service level agreements, key performance indicators and penalties.
- **Large initiatives:** Several major initiatives rolled into a single project spanning 26 months with a budget of \$10 million. Project included migration to a new credit processor, extensive hardware and software replacement, improved software distribution and standardization, tokenized sales transactions across channels, implementation of EMV payment standards and introduction of alternative payment acceptance. Responsible for vendor and financial management, application development, compliance adherence, executive communication, implementation and support.

Director Store and Corporate Systems (2012-2014)

Merged two distinct application development and support teams into a single organization.

- **Management:** Directed a team of four managers and 20+ associates, with an annual capital and expense budget of \$10 million. Created a single team responsible for tier II / III support, engineering, vendor management, service delivery and business analysis in support of store systems, HR, payroll, credit processing, corporate intranet, finance, procurement, loss prevention, and investor relations.
- **Leadership:** Presented monthly to CEO and executive committee and quarterly to Board of Directors Technology Committee regarding strategy, project status, IT risk, and system availability. Defined multiyear road map across the portfolio for store and corporate applications and store infrastructure.
- **Large initiatives:** Credit switch replacement - Replaced two legacy credit switch applications with a single upgraded platform servicing digital and store sales.

Major System Upgrades – Kronos Work Force Management, Lawson Financials, Aspect Loss Prevention, Hyperion Planning.

Returns Management – Implemented a centralized returns management system enabling non-receipted returns and improved fraud prevention.

DSW, INC. – continued...

(Senior) Manager – Store Systems (2007-2012)

- Senior Manager: 2009–2012
- Manager: 2007–2009

Managed a 15 associate team providing design, engineering and tier II / III support for 450+ retail locations.

- **Store Systems Support:** Merged infrastructure and application teams into a single organization supporting all in-store hardware and software, new store cabling and implementation services, procurement, payment and sales and traffic reporting.
- **Process Improvement:** Standardized hardware solutions and procurement partners, built the still-in-use internal technology process for opening and relocating stores which has a 100% on time rate and on-boarded a single partner to cable, stage and install all new stores.
- **Large initiatives:** Managed an 18 month, \$5.5 million, multi-vendor technology refresh project which upgraded the in-store hardware and operating systems, implemented an automated system build process and provided improved remote support capabilities, data polling and parameter management.

HUNTINGTON BANK – Columbus, Ohio

2006-2007

Manager – Enterprise Network Services

Managed 10+ associates in a design and support organization covering corporate, remote site and ATM connectivity, data security and disaster recovery.

- **Management:** Design, engineering and Tier II/ III support of data services including network connectivity, routing, switching, firewalls, proxies, load balancers, RSA tokens and management tools.
- **Regulatory Compliance:** Responsible for maintaining adherence to all regulatory standards. Worked directly with internal and external auditors for scheduled and unscheduled audits.
- **Disaster Recovery:** Managed bi-annual disaster recovery exercise ensuring full resiliency across data centers for all corporate-based firewalls, proxies, network nodes, point-to-point sites, and B2B VPN connections.
- **Financial Management:** Responsible for \$1 million annual expense budget.

INTELLINETICS INC. – Columbus, Ohio

2005-2006

Senior Consultant

Led project management and business process analysis.

- **Leadership:** Project planning, statement of work creation and RFP response.
- **Process Improvement:** Operational support procedures, project templates and artifacts, financial management.
- **Customer Relationships:** Managed existing customer account relations including technical support, new opportunities and governmental compliance.

TWEEN BRANDS – Columbus, Ohio

2001-2005

Manager – Data Communications (2003-2006)

Managed 10+ associates 24x7 Operations team supporting corporate and retail locations.

- **Managed Services:** Responsibilities in addition to voice and data networking included service desk for retail and corporate locations, desktop support, voice & data networks and two data centers.
- **Financial Management:** \$1.5 million annual expense and capital budget. Implemented detailed financial tracking and developed process and artifacts for regular auditing and analysis of telecommunication costs.

KEVIN RYAN, Page 4

614.753.1274 | ryanwkevin@gmail.com

TWEEN BRANDS – continued...

- **Improvement Initiatives:** Standardized 500 end user devices to a single desktop hardware and OS platform in four months. Implemented hardware and software inventory management as well as change, incident and problem management.

TWEEN BRANDS – Columbus, Ohio

(Senior) Network Analyst (2002-2003)

- Network Analyst: 2001-2002
- Senior Network Analyst: 2002-2003

Led enterprise support of all local and wide area networks.

- **VoIP Migration:** Led, designed and implemented \$1 million migration consolidating three legacy voice solutions into a single Cisco VoIP architecture including build out of new corporate headquarters and distribution center structured cabling for main and intermediate distribution frames.
- **WAN Migration:** Implemented B2B VPN connectivity in place of legacy point-to-point for corporate remote connectivity.
- **Support Services:** Led LAN and WAN operational support covering 700+ retail locations, corporate offices and distribution center.

CARDINAL HEALTH – Columbus, Ohio

1999-2002

Team Lead – LAN Infrastructure and Data Security (2001-2002)

Led support team of five associates in two states overseeing corporate offices, 22 distribution centers and three data centers.

- **Financial Management:** Accountable for \$1.3 million annual budget.
- **Large initiatives:** Led \$3 million migration to a consolidated Cisco Infrastructure.

CARDINAL HEALTH – Columbus, Ohio

Data Network Specialist (1999-2001)

Responsible for implementation and support of local area network.

- **Backbone Migration:** Led corporate backbone migration from ATM to gigabit Ethernet including structured cabling for intermediate distribution frames.
- **Support Services:** 3000+ node corporate headquarters and 22 distribution centers.

Education

Master of Science | Ohio University

Bachelor of Science | Ohio University



Ben Balc

Sr. Project Manager

Ben has 18+ years of PMP certified experience leading cross functional teams, as the single point of accountability, delivering value-add solutions across multiple platforms.

Soft Skills

- Facilitation, aligning Customer business requirements with IT solutions in support of end user adoption
- Player/coach, with successful track record for building matrixed project teams to plan and deliver project scope on time and within the forecasted budget
- Technical understanding of infrastructure integration and deployment across multiple sites, including IT security controls
- Advocate in support of Customer organizations mission statement and workplace culture with consistent practice for the same

Areas of Knowledge

- | | |
|-------------------------------------|---|
| ✓ Infrastructure build & deployment | ✓ 3rd Party Mobility Software Integration |
| ✓ Office 365 migrations | ✓ On / Offshore Resource Management |
| ✓ Win10 migrations | ✓ Risk Management / Mitigation |
| ✓ Active Directory consolidation | ✓ Change Management |
| ✓ Healthcare M&A | ✓ Manufacturing Oil & Gas |

Certifications

PMI PMP certified – 79791

PMI MBA certified

Education

BS CIS - University of Akron

AAS CIS - University of Akron

Projects of Note

- ✓ O365 Program implementation for large East coast-based health services provider
 - Office 365 migration
 - Win10 migration
 - Organizational Change Management
 - Exch migration
 - End User communications
 - AD consolidation
 - ✓ M&A Project management in support 3rd party FTP jobs and Business process onboarding for large East coast-based health services provider's acquisition of health insurance provider
 - ✓ Vendor management for B2B company's enterprise facilities move, including new facilities buildout and old facility decommissioning
 - ✓ M&A Program management, integrating and standardizing technical environments utilizing cross functional team, and third-party vendors
 - Active Directory consolidation
 - Workstation migrations
 - Exch migration
 - End User communications
 - Mobile device management
 - Win10 deployment
 - Application rationalization
 - User Acceptance Testing
 - ✓ Technical PM to establish SAP solution in Azure
 - Solaris/Oracle SAP migration to Windows/SQL SAP
 - On-prem to Azure SAP training landscape database refresh process
 - Azure Certified Security Controls "confidential" data classification
 - Azure backup and recovery using Data Protection Manger
 - ✓ Microsoft O365 Cloud optimization
 - Azure Active Directory and Federation Services Implementation
 - Exch 2010 to Office 365 Exch Hybrid Migration
 - Office 2016 ProPlus Deployment
 - ✓ Global R&D in support of developing a scalable 3rd Party Applications workflow:
 - Application rationalization / Total cost of ownership
 - Internal charge back system
 - Cloud optimization
-

- ✓ Mobile Operations Platform, delivering a fit for purpose 3rd party mobile application in support of oil & gas operator rounds at three North America refineries
 - Cisco C1D2 industrial wireless network build out at Ohio based refinery, including Motorola MC9090 MDM deployment
 - Motorola's Mobility Services Platform integration at multiple refineries allowing provisioning, monitoring, and rapid wireless deployment of Motorola handhelds
 - Maximo / Primavera P6 migration from Alaska regional data center to Houston mega data center
 - Syntempo / Primavera reporting solution implementation at North America based refineries
 - ✓ Business Information Manager, responsible for strategic development and delivery in support of West coast refinery IT investment portfolio
 - ✓ Liaison to US Refining and Petrochemical sites in support of vendor selection for industry Fatigue Management Identification guidelines, ANSI/API RP 755
-

Competencies

Project Management
Business Analysis
Process Engineer
Release and Deployment
Organizational Change
Management

Certifications

ITIL v3

Selected Areas of Expertise

- Experience in hospitality, manufacturing, retail, financial and health care industries
- Well versed in Agile and waterfall methodologies and can move between approaches to support project specifics and client goals
- Experienced requirements elicitation facilitation

Professional Summary

Amber Wilson is a Project Manager with Advizex. Amber is an accomplished IT professional with 20+ years' experience specializing in successful project and release execution, process improvement, and business partner satisfaction.

Project Experience

Allegheny Health Network – Pittsburgh, PA

Managing migration of 15K Exchange accounts to the Microsoft Azure cloud. Effort to include schedule coordination, end user communication management, creation of end user instructional and operational guides, management of Support Technicians, facilitation of cross-functional daily Go / No-Go meetings, metrics and dashboard reporting.

Highmark Health – Pittsburgh, PA

Managed migration of 22K Exchange accounts to the Microsoft Azure cloud. Effort included schedule coordination, end user communication management, creation of end user instructional and operational guides, management of Support Technicians, facilitation of cross-functional daily Go / No-Go meetings, , metrics and dashboard reporting.

United Bank – NC & SC

Managed Virtual Management hardware replacement for 62 individual branches. Effort included coordination of hardware shipping and delivery to branches, scheduling, and communication with Branch Managers, managing local Technicians to execute replacement, and issue resolution.

Project Management Institute

THIS IS TO CERTIFY THAT

Benjamin D. Balc

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE, KNOWLEDGE AND PERFORMANCE
IN ACHIEVING AN ORGANIZATIONAL OBJECTIVE THROUGH DEFINING AND OVERSEEING PROJECTS AND
RESOURCES AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

Project Management Professional (PMP)®

IN TESTIMONY WHEREOF, WE HAVE SUBSCRIBED OUR SIGNATURES UNDER THE SEAL OF THE INSTITUTE



Randall T. Black
Chair, Board of Directors



Sunil Preshara
President and Chief Executive Officer



PMP® Number [REDACTED]

PMP® Original Grant Date 05 December 2003

PMP® Expiration Date 04 December 2022



Project Management Institute

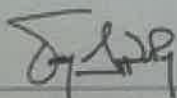
THIS IS TO CERTIFY THAT

Rod McCarthy

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE, KNOWLEDGE AND PERFORMANCE
IN ACHIEVING AN ORGANIZATIONAL OBJECTIVE THROUGH DEFINING AND OVERSEEING PROJECTS AND
RESOURCES AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

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Tony Appleby
Chair, Board of Directors



Sumit Prashara
President and Chief Executive Officer



PMP® Number [REDACTED]
PMP® Original Grant Date 23 March 2007
PMP® Expiration Date 22 March 2023



Project Management Institute

THIS IS TO CERTIFY THAT

David R. Madl

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE, KNOWLEDGE AND PERFORMANCE
IN ACHIEVING AN ORGANIZATIONAL OBJECTIVE THROUGH DEFINING AND OVERSEEING PROJECTS AND
RESOURCES AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

Project Management Professional (PMP)[®]

IN TESTIMONY WHEREOF, WE HAVE SUBSCRIBED OUR SIGNATURES UNDER THE SEAL OF THE INSTITUTE



Tony Appleby
Chair, Board of Directors



Sunil Prashara
President and Chief Executive Officer



PMP[®] Number: [REDACTED]

PMP[®] Original Grant Date: 08 July 2013

PMP[®] Expiration Date: 07 July 2022



**Project
Management
Institute[®]**



APPENDIX C – TECHNICAL BIOGRAPHIES

Technical Profile

Clarence Garner, Sr. Solutions Architect

Summary

Clarence has over 20 years of experience in system architecture, planning/design, migration/consolidation/implementation/upgrade; including Microsoft Exchange, Microsoft Infrastructure, Office 365, Active Directory and Microsoft Collaboration products.

He has performed configuration and management of Active Directory, Microsoft Exchange, Lync/Skype for Business, BES/Airwatch and various MDM solutions, Microsoft Clustering, Office 365 and Azure AD. He has also administered Cisco IronPort ESAs, Load Balancers, HP and IBM Server platforms as well as various deployment/management platforms.

Clarence's experience includes:

- Large Scale server virtualization architecture, planning, and deployments 3000+ users
- Large Scale AD/Exchange migrations both on-premises and cloud
- Business transformation and adoption of cloud-services
- Large scale migrations and integrations from MNA's
- Storage/Network/Server infrastructure design centering on Blade Technologies, SAN, and VMware
- Disaster recovery architecture/planning/implementation including storage replication and server virtualization technologies.
- Enterprise Messaging > 10,000 users
- Infrastructure Services, Operations, Identity, and Configuration Management
- Office 365 Implementation and Migration
- Project Management and Organization of various scale deployments

Technical Profile

Certifications & Awards	Product Experience
MCSA Office 365	Microsoft Exchange 5.5-2016
MCSA Server 2012	Office 365
MCSE Productivity	Skype for Business
	Cisco IronPorts
	Kemp LoadBalancer
	Barracuda Email Appliance / Cloud Control
	VMWare
	Microsoft Azure
	ADFS
	Hyper-V 2012
	Sybari Antigen / ForeFront for Exchange
	PowerShell Scripting
	Dell KACE
	Veritas Backup Solutions
	Quest Migration Tools
	BitTitan Migration Tools

Projects of Note

United Bank – Chantilly, VA (3000+ users)

- Migrated all users from GroupWise to Office 365
 - Implemented hybrid migration for Office 365 migration
 - Remediated environment (Exchange and AD) for Office 365 readiness
 - Implemented Azure AD Connect for directory synchronization
 - Implemented and assisted with security measures to fit within the PII requirements
 - Wrote custom scripting to support helpdesk and messaging administrators for daily operational tasks
- Domain migration of George Mason Mortgage
 - Migrated domain accounts to United Bank parent AD to support Office 365
 - Migrated machine accounts
 - Migrated servers to new domain
 - Migrated email from Exchange 2010 to O365
 - Enabled Skype for Business for all users
 - Worked with support staff for knowledge transfer and documentation

Orlando Utilities Commission – Orlando, FL (2000+ users)

Technical Profile

- Migrated all users and public folders from Exchange 2013 to Exchange 2016
- Assisted with technical staff on application integration with Exchange such as:
 - Telephony system
 - MDM/MAM application
 - Archiving systems
- Implemented co-existence between Exchange 2013 and 2016
- Remediated environment (Exchange and AD) for readiness
- Implemented security measures to fit within the business requirements
- Assisted with the rollout and enablement of cache mode across organization
- Created baselines for network readiness
- Planned for future Office 365 readiness

Northeast Ohio Medical University – Rootstown, OH (1500+ users)

- Configured, implemented and migrated all users from Exchange 2007 to Exchange 2013
- Remediated environment (Exchange and AD)
- Implemented ADFS for SaaS applications
- Implemented ManageEngine self-service portal for users
- Implemented messaging security measures to fit within the requirements
- Worked closely with client's project manager on communications, updates and milestones

Bank of North Carolina – Asheboro, NC (1200+ users)

- Migrated all users from Exchange 2010 to Office 365
- Implemented hybrid migration for Office 365 migration
- Remediated environment (Exchange and AD) for Office 365 readiness
- Implemented Azure AD Connect for directory synchronization
- Implemented security measures to fit within the GLBA requirements
- Implemented Multi-Factor Authentication for OWA connected users
- Assisted with the rollout Office 2016 across multiple locations using Dell KACE
- Company branded the Office 365 Portal
- Worked / Created baselines for network readiness

Pinnacle Financial Services – Nashville, TN (1200+ users)

- Migrated all users from Exchange 2007 to Office 365
- Implemented security measures to fit within GLBA regulations
- Implemented Multi-Factor Authentication for Admins

Technical Profile

- Company branded the Office 365 Portal
- Assisted and managed the rollout Office 2013 across multiple locations using Dell KACE and Group Policies
- Created and executed automated scripts to redirect UM traffic flow to cloud accounts for older phone system

Black Box Network Services – Pittsburgh, PA (4,000+ users)

- Lead technical engineer and project manager
- Planned & Designed Exchange 2013 environment running in a virtualization environment
- Provided Bill of Materials to accommodate design requirements
- Provided project plan to IT Director, CIO, CTO for the build with timelines and resources
- Provided DR failover plan with steps for the infrastructure to meet RTO/RPO
- Implemented Exchange 2013 multi-server environment with HA requirements
- Migrated 2TB of public folder
- Worked with Black Box IT team on tuning load balancer requirements
- Worked with Black Box IT team on 3rd party application and Exchange 2013 readiness

Direct Energy – Houston, TX (10,000 users)

- Designed Exchange 2010 DR environment running in a virtualization environment
- Provided Bill of Materials to accommodate design requirements
- Provided project plan for the build with timelines and resources
- Provided DR failover plan with steps for the infrastructure to meet RTO/RPO
- Worked with their existing Managed Services provider on technical details

Smithfield Foods– Kansas City, MI (2000+ users)

- Migrated Farmland Foods from a hosted Exchange environment to Office 365
- Migrated user accounts from multiple forests to a new forest with standard UPN naming convention
- Automated UPN changes, custom attribute re-writes and other Exchange-related attributes to the new domain/forest during nightly migration
- Automated home drive renaming and permissions post UPN changes
- Assisted technical staff with documentation for user communication post migration

Technical Profile

- Provided and created an Active Directory assessment report for John Morrell Food Groups
- Worked with several teams (including Microsoft) for determining best path for JMFG AD/Exchange migration

West Virginia State Auditor's Office – Charleston, West Virginia (500 users)

- Migrated Active Directory from 2003 to 2012 including network services (DHCP, DNS, WINS)
- Migrated 250 users from Exchange 2007 to Office 365
- Implemented 2-factor authentication for Outlook and mobile devices
- Assisted technical staff to identify remediation plans for Active Directory strategy and migration to resolve existing AD/Exchange issues.
- Assisted technical staff of transitioning to Lync IM replacing existing 10-year IM solution

Carnegie Museum of Pittsburgh – Pittsburgh, Pennsylvania (850 users)

- Migrated 850 users from Exchange 2010 to Office 365
- Assisted technical staff to identify remediation plans for a successful migration
- Provided “plan of action” for Barracuda Archive
- Assisted technical staff with retention policies, archiving and legal hold options
- Assisted technical staff with co-existence of on-prem public folders
- Configured, designed and implemented Intune MDM for faculty staff and several students
- Configured, designed and implemented Microsoft MFA with conditional access policies
- Configured, designed and implemented conditional access policies based off location and group controls
- Configured, designed and implemented, upgraded ADFS farm from 2012 to 2016 including load balancing

CSM Group – Kalamazoo, Michigan

- Installed, configured a “Jump Start” of Hyper-V virtualization
- P2V'd and setup new servers in virtualization environment
- Assisted technical staff on migration plans for 3rd party applications
- Setup HP servers for iSCSI connecting to an EMC VNX backend SAN
- Labelled servers and cabling in datacenter

Technical Profile

Ohio National – Cincinnati, Ohio

- Assisted in migrating core network services (DHCP, DNS, WINS) from 2003 to 2008 domain controllers.
- Identified and worked with technical staff to identify remediation plans for Active Directory strategy and migration to resolve existing AD issues.
- Moved FSMO roles from 2003 to 2008 domain controllers
- Assisted in a Read-only domain controller for the DMZ
- Implemented and migrated certificate services from single root CA on a domain controller to 2-tier internal CA
 - Certificate migration from SHA-1 to SHA-2

Three Rivers Health – Three Rivers, Michigan (600 users)

- Designed Exchange 2013 environment running in a VMWare 5.1 farm
- Implemented Exchange 2013 single server to support existing seat count with room for expansion
- Validated health on server for performance and sufficient I/O response for enhancements
- Assisted customer with policies and HIPAA compliance strategies as pertaining to email
- Provided recommendations on Barracuda archiving and backup solutions
- Provided migration path for customer from GroupWise email platform

Panther Expedited Services – Seville, OH

- Designed and implemented (3) 4-node Microsoft Server 2012 multi-subnet clusters running in a VMWare 5.1 farm
- Clusters are tuned to support SQL Server 2012 in an Active/Active – Passive/Passive configuration with EMC RecoverPoint replication across datacenters
- Assisted with VLAN networking for heartbeat traffic across datacenters
- Assisted with converting virtual switches to distributed switches within VMWare

Technical Profile

John Dyer, Sr. Solutions Architect

Consultant Background

John has over 20 years of experience in system architecture, planning/design, migration/consolidation/implementation/upgrades including: Microsoft Infrastructure, Active Directory, IDM, ADFS and Enterprise Messaging & Collaboration.

He has performed configuration and management of: Windows NT 4 - 2016 Active Directory; Microsoft Exchange 5.5 - 2016; Lync 2010 – Skype for Business (IM only); BES/Express, Identity Management software and extensive automation with PowerShell

John's experience includes:

- Disaster recovery architecture/planning/implementation
- Enterprise Messaging > 10,000 users
- Infrastructure Services, Operations, Identity Management
- Scripting / Automation with PowerShell
- Planning migration activities with Acquisitions and Divestitures. These migrations included:
 - File share migration from Novell to Microsoft
 - Groupwise 5.5 to Exchange migration
 - Lotus Notes 8.0 to Exchange migration
 - Previous versions of Exchange to newer versions of Exchange
 - Exchange to Office 365
- Federation of Identity utilizing Identity Management software and Microsoft AD FS

Technical Profile

Technical Expertise

Infrastructure	Applications	Virtualization	Operating Systems
<ul style="list-style-type: none">• Exchange• Lync/Skype/Teams• Active Directory• Clustering Technologies	<ul style="list-style-type: none">• Microsoft Forefront for Exchange• Microsoft Lync 2010• Microsoft Exchange 2003, 2007, 2010, 2013, 2016• Office 365• Microsoft AD FS• MicroFocus Identity Manager• Quest Migration manager for AD and Exchange	<ul style="list-style-type: none">• Hyper-V	<ul style="list-style-type: none">• Windows 2003 – 2016

Certifications

- Microsoft Certified Information Technology Professional
- Certified Novel Administrator 5

Projects of Note

Highmark Health Services (> 60,000 Users)

- Performed health check of environment with team and designed a migration strategy for 5 domains to one new domain.
- Performed GPO consolidation analysis and aided with implementation
- Established directory syncs in between each domain for users and groups
- Established Migration workflows for each domain including powershell scripts to automate as much as possible
- Performed Workstation migration using quest migration manager
- Assisted exchange team with troubleshooting in new domain to establish Autodiscover properly.
- Assisted exchange team with mobile device management setup

Technical Profile

- Established process to remove outdated Credant Encryption software utilizing scripted procedures.

American Chemical Society (> 2000 Users)

- Performed health check of environment for a domain consolidation to the parent company.
- Designed and deployed new Exchange 2016 servers to extend the parent companies environment into the child companies data center.
- Designed and deployed new Skype for Business servers to extend into the child companies data center.
- Performed GPO analysis and provided recommendations for consolidation
- Assisted with Symantec vault migration for email archives
- Assisted with setup of Mobile Iron for users migrating into the parent company.
- Assisted with PKI setup to be used with Skype for Business
- Created Powershell scripts to automate nightly migration processes.
- Assisted with migrations of workstations using Quest Migration Manager.

IPEG (> 800 Users)

- Performed health check of environment and implemented the suggested corrections.
- Designed and implemented solution to migrate into office 365
- Design included the following
 - New AD FS infrastructure with Server 2012 R2
 - New Azure AD connect to sync Identities into office 365
 - New Exchange 2016 server to be used for the hybrid configuration.

Huntington National Bank (> 6,000 users)

- Migrated all Novell file shares to Microsoft file shares using Quest software and custom written scripts to fill in the gaps ensuring users did not notice the change.
- Assisted with designing and planning Role Based Access Controls for entire organization. Worked with both Windows teams and Linux/Unix teams to ensure solution fit.
- Automated implementation tasks for RBAC with PowerShell.
- Introduced proper development Active Directory environment for testing purposes in the bank.

Technical Profile

- Designed and deployed drivers for MicroFocus Identity manager to manage development environment along with ensuring proper RBAC procedures were followed.

Timken Steel (> 3,000 users)

- Designed and implemented divestiture strategy with Timken Bearing during the Timken Company split for Active Directory (2008 R2) , Exchange 2010 and Lync 2010.
- Migrated all user mailboxes and profiles using Quest Migration Manager.
- Designed and implemented High availability design for new Exchange and Lync servers.
- Designed and implemented Disaster recovery strategies.
- Trained new Administrative staff on how to maintain and administrate the new servers.

Fives Group (> 600 users)

- Helped with design and setup for office 365 migration from Exchange 2007
 - Corrected issues with Tennant, had to work with Microsoft to resolve
 - Installed Exchange 2013 for Hybrid
 - Utilized Password sync

Polyone (> 8,000 users)

- Helped with stabilizing environment after an Exchange 2010 system was installed onto new VMWare Hosts.
 - This varied with issues from wmi permissions were corrupt, to some prerequisites not being installed.
 - Resolved several issues in Active directory that were directly impacting usage in Exchange.
 - Resolved issues with databases failing over to DR Site.
- Designed solution to address instability and delivered.
- Designed solution for Test environment to allow for testing patches and any changes.

State of Ohio (> 60,000 users)

- Designed and implemented migration strategy for over 30 different agencies during the consolidation effort the state was running. This consolidation effort focused on bringing in all email systems into one central store.
 - Migrations ranged in earlier versions of Exchange to Exchange 2010
 - Department of Taxation (> 800 users) was Lotus Notes 8.0 to Exchange 2010 for Email only.

Technical Profile

- ODJFS was Groupwise to Exchange 2010
- Helped with scoping out potential migration of some users to office 365
- Helped with troubleshooting of issues with Microsoft Identity Manager.
- Created automation scripts in PowerShell to cover gaps where the utility software did not cover as well as to do custom migration scenarios.



Technical Biography for:

Michael Leonard
Microsoft Practice – Senior Delivery Consultant

Industry Certifications:

Microsoft Identity and Security
Microsoft Teams
Microsoft Azure Fundamentals
VCP-DM2020 (VMware Desktop and Mobility)
VCP-DCV6 (VMware Datacenter Virtualization)
VCP-NV (VMware Network Virtualization)
Server 2008 – Virtualization
VMC on AWS 2020 (VMware Cloud on Amazon Web Services)
Windows 7
Windows 10
A+

Competencies:

Security Evaluations and Hardening
Active Directory Suite
Office 365
Windows 10 Migration
Quest Migration Manager
Backup and Replication Design and Implementation
Exchange
Assessment and Remediation
VMware Horizon
VMware vCenter
VMware ESXi

Selected Areas of Expertise

Mike's experience within the Microsoft solutions practice includes:

- Evaluation and implementation of Security hardening best practices
- Domain consolidations and migrations
- Healthcare implementations of VMware Horizon and Windows 10
- Microsoft on premises server infrastructure and architecture
- Implementation of WSUS patching solution
- Microsoft Infrastructure security reviews and best practice implementations



Professional Summary

Michael Leonard is a Senior Microsoft Delivery Consultant for AdvizeX. Michael's experience ranges from domain consolidation and migration, security hardening, VDI (VMware Horizon) implementation, Windows 10 optimization and backup strategy and implementation.

Michael has implemented multiple designs for clients that include domain migrations, imaging solutions, security hardening, ransomware recovery, thin client management, VMware horizon implementation and environment evaluations.

Project Experience

Michael is currently working on the Cleveland, Ohio's Practice team as a Senior Delivery Consultant with experience on the following projects:

University Hospitals – Northeast Ohio

- Domain consolidation and migration for 2 hospital acquisitions.
- Application management for across-forest and across-domain access
- Working with and managing multiple teams to ensure functionality
- Imaging and deployment of over 2000 workstations
- Management of more than 10 team members
- Primary escalation point for all migration-related issues

Lake Health – Willoughby, Ohio

- Best practice design and implementation of VMware Horizon VDI
- Upgrade of vCenter and ESXi systems within VDI environment
- Windows 10 image optimization

Highmark Health Systems – Pittsburgh, PA

- Domain consolidation of over 50,000 users
- Computer systems migrations utilizing Quest Migration Manager
- Working with on-site teams for troubleshooting and working with appropriate teams to repair workflows

Applied Industrial Technologies – Cleveland, Ohio

- Security Hardening evaluation and implementations
- Group Policy review and best practices evaluation

Atlantic General Hospital – Baltimore, MD

- Domain patching solution review
- WSUS greenfield implementation and oversight
- Training of desktop personnel to take over implementation of Group Policy and training on monitoring environment





Pittsburgh Airport – Pittsburgh, PA

- Health check of Certificate Authority following reports of problems
- Process review and correction implementation

Wooster Community Hospital – Wooster, OH

- Design and implementation of VMware Horizon environment
- Working with WCH personnel on training, troubleshooting, and improvements
- Process evaluation and recommendations

Rod McCarthy PMP, SMC

Summary:

I offer years of experience with program, project and service account management.

I specialize in managing professional services engineering in VOIP, Network, Video, Compute and Storage technologies. I have an active PM certification since 2007 and a current member of PMI.

Capabilities / Area of expertise:

- Experienced with Cisco, EMC, Microsoft, HP, Infinidat, Rubrik, Nutanix, AWS cloud technologies.
- Healthcare, Finance, State Organizations, Banks, Pharmaceutical business areas.
- Project Management, Program Management, Engagement Management
- Service Account Management
- Data Center Migrations
- Network Implementations
- Contact Center Design and Implementations
- Customer Facing Presentations and Project Meetings
- Managed Services
- Disaster Recovery
- PMO Development
- Service Now and software Implementations

Success Stories / Project accomplishments:

Pharmaceutical Company - Project consisted of two nineteen floor towers in the Boston Seaport district. Project managed and implemented Cisco UC, UCCX, network, wireless, video, storage and phone training.

Healthcare Company - Project managed and converted eleven hospitals from PBX to Cisco UC, UCCX VMware, vRA, vRO, ServiceNow development and implementations.

Economic Consulting and Strategy Company - Project consisted of their headquarters and eleven remote sites converting Suretel system over to Cisco UC, UCCX, network, wireless, new circuit installations and phone training.

Municipal Buildings – Converted PBX to Cisco UC, UCCX and phone training.

Police Department- Headquarters and seven police departments – Converted PBX to Cisco UC, network and phone training.

Solar Power Panel Manufacturer –Three facilities including a data center in Wuhan China. Converted PBX to Cisco UC, UCCX, video, network, wireless and phone training.

Financial Institute – Headquarters and thirty remote buildings converted from PBX to Cisco UC- UCCX, network, wireless and phone training.

Bio Company – Implemented Service Now –Service Now development, VMware migrations, Data Center moves.

International Bank and Trust Company – 65 data center sites: Dell sever, Cisco switch POD, VDI deployment and integration with Nutanix.

Experience:**Services Engagement Manager**

Advizex, Burlington Ma 1-2019 to Current

Senior Project/ PMO Manager

ConRes, Bedford Ma 12-2017 to 1-2019

Service Account Manager / Senior Project Manager

Round Tower Technologies, Wakefield Ma 10- 2016 to 12-2017

Program Manager / Senior Project Manager

Presidio, Woburn, MA 9-2013 to 10-2016

Cisco gold partner, EMC, Microsoft solution provider

Senior Project Manager

NWN Corporation, Waltham MA 12-2011 to 9-2013

Cisco gold Partner, Microsoft and HP Partner / VAR

Senior Project Manager

Presidio, Woburn, MA 9-2005 to 12-2011

Cisco gold partner, EMC, Microsoft VAR / Professional services organization

Service Delivery Manager

InteQ Bedford, MA 12/2003 to 9-2005

IT Management support and Professional services solution provider

Lead Technical Account Manager– Project Manager, Business Solutions Manager

NaviSite - Andover, MA 1999 to 12/2003

Web hosting, managed services and professional services for IT support.

Certifications:

- PMP –Active since 2007.
- Telepresence Video ATP 2011.
- Scrum Master 2013.

Education:

- Boston University - Project Management IT.
- PMP boot camp – PMKI.
- ITIL Certification Course.
- Scrum Certification SCRUMstudy.
- ServiceNow ITSM, ITOP Certification

Professional Society:

- PMI – Active Member Since 2005.

Chris Biller

12221 W Sprague Rd.
North Royalton, OH 44133
(440)668-3094 cbiller@advizex.com

Work Experience

Rolta-Advizex, Cleveland, Ohio

Title: Delivery Consultant

August 2015 – Present

Responsibilities

- Assisting customers in design, implementation and integration of network and security solutions for small/medium/large networks
- Designing and implementing new network topologies as needed, incorporating best practices around WAN/LAN, mobility, switching, routing, security and convergence
- Ability to monitor network performance and resolve performance and connectivity issues
- Cisco route/switch/ASA/wireless/Nexus
- Palo Alto firewalls
- Load Balancers (NetScaler, Kemp)
- Aruba Wireless
- VPN Solutions
- Data Center expertise

Projects

- Re-IP addressed entire network for massive manufacturing customer spanning multiple sites nationwide
- Migrations to Palo Alto firewalls from Cisco, Checkpoint, Juniper and others
- Network residencies acting as fill-in network/firewall engineer

Vitamix, Olmsted Falls, Ohio

Title: Network Engineer

October 2014 – August 2015

Day-to-day tasks:

- Data Center support and troubleshooting
- Firewall security and NAT policies
- Network documentation
- Ensuring network stability and performance, LAN/WAN
- Provide training and support to other infrastructure engineers
- Optimize network monitoring and alerts
- Load balancer administration
- QoS administration
- See Vitamix – Network Administration, day-to-day tasks below

Major Projects:

- Implemented and supported network hardware and improvements necessary for ERP migration from Microsoft Dynamic to Oracle
- Deployed ultra low-latency Data Center Interconnect and Cisco OTV to support EMC RecoverPoint and VPLEX
- Deployed Citrix NetScaler load balancers to support new data center applications

Relevant Hardware, Platforms and Devices:

- See Vitamix – Network Administrator, relevant hardware, platforms and devices below

Title: Network Administrator

November 2012 – October 2014

Day-to-day tasks:

- General network monitoring, design and troubleshooting (LAN, WAN and WLAN)
- DNS (Internal/external) and DHCP (IOS and Windows) administration
- VPN: Remote sites (IPsec) and remote users (SSL) on both Cisco and Palo Alto platforms
- Network security: Hardening systems, updating OS, port security
- Remote and local layer 2/3 support (port activation, VLANs, etc.)
- Hardware ordering/provisioning
- Remote site turn up/upgrades (retail stores, branch offices)
- Firewall rule/policy changes and reporting
- RADIUS Administration (RSA, Cisco ACS and FreeRADIUS)
- Support tickets (RT and ServiceNow)

Major Projects:

- Network core upgrade (Cisco 3750G stack to 4507R-E quad supervisor VSS)
- IPsec to MPLS migration
- Static route to OSPF conversion
- Palo Alto firewall deployment, migration from Cisco ASA (7 sites)

- Data Center build out (active/active data centers with Nexus 7K, firewalls, VCE VBlock)
- Call Center build out (Layer 2/3 network, Cisco wireless, assisted voice team with routers and call copy setup)
- SSL VPN migration from Cisco AnyConnect to Palo Alto GlobalProtect with RSA 2-factor authentication

Relevant Hardware, Platforms and Devices:

- Cisco Switches: 2960, 3550, 3650, 3750, 3850, 4500
- Cisco Routers: 1760, 19xx, 28xx, 29xx, ASR1001
- Cisco Nexus: 7009, 5548, 1000v
- Cisco Firewalls: ASA 5510
- Cisco Wireless: WLC5508, 2504, ACS, various LWAPs
- Cisco UCS: C and B series
- Load Balancers: Kemp LoadMaster, Citrix NetScaler 5500
- Palo Alto Firewalls: PANOS 5.0, 6.0, 6.1; PA200, 3020, 5050

Revol Wireless, Independence, Ohio

Title: Network Administrator

July 2011 – November 2012

- Day-to-day network maintenance including ACL requests, port VLAN requests, traffic monitoring and checking logs
- Disaster recovery planning
- Set up network racks, racked gear, ran cables and created device configurations from scratch
- Successfully upgraded core network to migrate phone data from 1x to EVDO 3G on the production network without a dev environment
- Hardware maintenance such as swapping blades or stacked switches, RMAs to Cisco, updating operating systems
- Set up SSL and site-to-site VPNs for vendors and users
- Network engineering: troubleshooting routes, optimizing network performance, planning/adding new devices
- Network security: ACLs, restricting border access, enforcing password encryption, AAA, packet caps, port mirroring
- Integrated Juniper EX4200 virtual chassis into Nortel phone witch environment to allow console access

Relevant Hardware, Platforms and Devices:

- Cisco Switches: 3500XL, 3550, 3750(E, G and X), 6500
- Cisco Routers: 871, 1760, 18xx, 26xx, 28xx, 7206
- Cisco Firewalls: FWSM, 5520, 5540
- Cisco PDSN, PGW, AS5400 media gateway, VPN Concentrator 3xxx
- Juniper EX switches, MX routers and SRX firewalls
- Nortel ERS 8610 Passport, Nortel 3510-24T
- F5 BigIP 3400

Eaton Corporation, Cleveland, Ohio

Title: IT Analyst, contractor

November 2010 – July 2011

- Developed and prepared client computer solutions in a team setting
- Defined, developed, configured and supported all client applications
- Worked closely with management to prioritize business goals and information needs
- Customer support and system administration
- PC setup and deployment
- Ticket logging and resolution

Skills

- CCNP-level routing and switching
- Network security/design/engineering
- Multilayer switching: Spanning-tree, HSRP, VRRP, port security(ARP/DHCP inspection, MAC security,) VLANs, Inter-VLAN routing, port-channels
- Network QoS
- Policy Based Routing
- Dynamic routing protocols: BGP, OSPF, EIGRP, RIPv2, static, route redistribution
- Multihomed WAN connections
- Cisco Wireless (WLC and LWAPs)
- Cisco Voice Administration
- RADIUS (FreeRadius, Cisco ACS, RSA)
- VPNs: IPSEC site-to-site, dynamic endpoint, SSL, 2-factor authentication, multi-vendor tunnels
- Firewalls: Cisco/Juniper/Palo Alto, active/active, active/passive HA configurations
- NAT/PAT
- Windows XP, 7, 8, 10, Server 2003, 2008R2 and 2012
- Active directory, DNS, DHCP, Sharepoint

- Linux: Fedora, CentOS, RHEL
- Network monitoring systems: Solarwinds, Cacti, WhatsUpGold, Zenoss, syslog
- Load Balancers: Citrix NetScaler, Kemp, F5
- General understanding of some cellular/telecom specific equipment (SMSC, MMSC, AAA)
- vCenter 5.1, 5.5 and 6.0

Education

The University of Akron

Bachelor of Science, Computer Information Systems – Networking Option

Associate of Applied Business, Computer Information Systems – Maintenance and Networking

Akron, Ohio

Certifications and Accomplishments

- Palo Alto PCNSE6 (September 2015 – Present)
- CCNA (June 2009 – June 2012)
- First Aid, Professional Rescue certified
- CPR/AED for the health care provider certified

Brandon Andritsch

Consultant Background

Over 20 years of professional Systems Engineering experience and over six years of professional experience working with multiple VMware components. Extensive experience in planning, designing, delivering, and administering virtual-based enterprise solutions.

Skills: Enterprise Server and Infrastructure Deployment, Infrastructure Assessments, Project Documentation, Knowledge Transfer, Training, Risk Management, VMware VDI, NSX, Automation and SDN, VMC on AWS

Operating Systems: Windows Server 2000/2003/2008/2012/2016, Windows Desktop XP/Vista/7/8/10, Redhat Enterprise Linux / Debian

Virtualization: VMware vSphere 4.x/5.x/6.x, VMware Horizon Suite, P2V / V2V Migrations, VMware Health Checks, VDI Profile Management, PCoIP/Agent/Client GPO Optimization, VMware Optimization, VMware Workstation, vRealize Operations Management, VMware Site Recovery Manager, VMware ThinApp, VMware PowerCLI, PowerShell, SDN NSX, VMware vRealize Orchestrator, VMware vSAN

Networking: VMware NSX T & V, DNS, Firewall rules, Port Groups, Access lists, DHCP, Troubleshooting, VLAN Configuration, LACP link aggregation

Security: Symantec / McAfee Antivirus, vCloud Networking and Security

Applications: MS Office 2007/2010/2013, MS Exchange Server 2007/2010, Remedy Action Request System

Certifications: Microsoft Certified Technology Specialist – MCTS
VMware Certified Professional – VCP5-DCV
CompTIA Security+ 2008

Recent Projects

Healthcare – Ohio

2020

- ❑ Created conceptual, logical, and physical design plans including design decisions for NSX-T multisite deployment
- ❑ Assisted with planning and development of the NSX in a multisite environment
- ❑ Senior Consultant overseeing engineers focused on creation of Micro-Segmentation firewall and routing policies.

Healthcare – Illinois

2019

- ❑ Created conceptual, logical, and physical design plans including design decisions for each component (e.g., hardware, operations management, VMC on AWD, for applications and Desktops)
- ❑ Assisted with planning and development of the migration of workloads for on prem to cloud. Determine application dependencies and network requirements for the migration of virtual workloads
- ❑ Senior Consultant overseeing local staff of 8 engineers focused on management of goals, decisions, risks, assumptions, and deployment application and migrations

Healthcare – Ohio

2017

- ❑ Architect for Virtualized Desktop Infrastructure environment for 14,000 users with in a multi Cloud POD deployment of Horizon View and NSX across multiple datacenters on Hyper Converged architecture.
- ❑ Created conceptual, logical, and physical design plans including design decisions for each component (e.g., hardware, operations management, HyperConverged Vxrail architecture, profile management solutions, etc.)
- ❑ Assisted with development of installation, build, and configuration procedures for Horizon View, NSX, and VMware App Volumes to produce a complete solution micro segmented Desktop environment
- ❑ Senior Consultant overseeing with local staff of 8 engineers focused on management of goals, decisions, risks, assumptions, and deployment of virtual desktops and remote applications

Housing – Virginia

2015

- ❑ Joint architect for Virtualized Desktop Infrastructure environment for 8000 users with advanced configurations including two logically separated datacenters and one physically separated datacenter
-

- ❑ Created conceptual, logical, and physical design plans including design decisions for each component (e.g., hardware, operations management, SAN architecture, profile management solutions, etc.)
- ❑ Assisted with development of installation, build, and configuration procedures for Horizon View, ThinApp, and VMware App Volumes to produce a complete solution
- ❑ Organized meetings for coordination with local staff to determine required goals, decisions, risks, assumptions, etc. and developed mitigations where appropriate for risks
- ❑ Coordinated with various hardware and software vendors to ensure solution viability within existing environment

Museum – Pennsylvania

2014

- ❑ Deployed new ESXi hosts, vCenter, vRealize Operations Management, and vSAN
- ❑ Developed, tested, and executed plans for seamless migration from previous IBM BladeCenter based vSphere 5.1 environment to the new vSphere 6.0 environment without downtime
- ❑ Completed documentation of configuration, operations, and deployment of new vSphere 6.0 environment

Law Offices – Ohio

2014

- ❑ Architected and deployed VMware SRM for a large Disaster Recovery implementation
- ❑ Assisted local storage administration staff with design of proper LUN configurations for use with SRM

Housing – Ohio

2014

- ❑ Administrated virtualized infrastructure, working with multiple teams to develop process and procedures for server deployments, configurations, and automation for both Linux and Windows servers
 - ❑ Administrated ~400 virtual machines in both Production and Disaster Recovery sites
 - ❑ Deployed and configured VMware SRM implementation for disaster recovery between Production and DR datacenters
 - ❑ Developed VMware PowerCLI scripts for needs such as management of VMware inventory and updates for hosts
 - ❑ Configured, deployed, and maintained vCenter Operations Management solution
-

- ❑ Coordinated with OS and development teams to identify and resolve issues with performance throughout the infrastructure using vCenter Operations Management

Financial Services – Kansas

2013

- ❑ Architected and deployed VMware vSphere and View environment for utilization at multiple remote WAN sites according to best practices
- ❑ Optimized PCoIP and base image to allow for connection over lower bandwidth links

Energy Provider – Michigan

2013

- ❑ Maintained and implemented best practices on existing VMware View 5.0 environment with ~300 virtual machines
 - ❑ Architected and implemented VMware SRM using LUN based replication for existing VMware View environment
 - ❑ Designed and deployed separate VMware vSphere environment used for development and testing purposes
 - ❑ Migrated ~200 virtual machines from existing datastores to new datastores after restructuring the existing datastore architecture
 - ❑ Modified connection broker infrastructure to allow for full redundancy of both Two Factor Authentication and Single Factor Authentication access over separate connection methods to the same View environment
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Nemtallah Daher

Profile Summary

Nemtallah Daher is a Network Delivery Consultant in the Advizex Technologies Network Services Solutions practice. The Network Practice focuses on the professional services delivery of best of breed integrated solutions for enterprise in the area of networking. Nemtallah has significant experience with most of the industry leading solutions including Linux, Unix, VMware NSX, VMware, Cisco and HP networking. Nemtallah has over 30 years of experience in the IT field. He also has over 20 years of experience in designing and managing data networks in large and complex environments.

Nemtallah is a great verbal communicator. He is able to convey complex processes and solutions to his clients in a simplified manner. Nemtallah also has great written communications skills. He is to produce documentation and training materials that are easy to understand, and use by his clients. Nemtallah embodies Advizex's ideals of developing customers and relationships for life.

Expertise within the practice

- Data Center Design, Best Practices, and Implementation
- Layer 3 Routing (BGP, OSPF, EIGRP) Design and Implementation
- Layer 2 Switching (HSRP, GLBP, VTP, STP, IPsec and VLAN's) Best Practices
- Advanced Network Infrastructure troubleshooting utilizing protocol analysis
- Advanced NSX-T Design and Deploy, migrations from NSX-V to NSX-T deployment and configuration of AVI load balancing
- Design, Implementation, and support of Cisco ASA technology
- Unified Wireless Design and Implementation
- Disaster Recovery Process: Planning, Testing, Documentation
- Data Center Virtualization: VMware NSX, HCX, AVI, HCX

Certifications

- VMware VCDX-NV
- VMware VCIX-NV

Technical Skills

Programming/Scripting: VBScript, JavaScript, PERL, PowerShell, ASP, AWK

Operating Systems: Windows, Mac OS X, Unix, Linux, Solaris, FreeBSD, VMware/vSphere, VMware NSX

Storage: FC, FCOE, NAS, SAN, NFS, iSCSI, ZFS, FreeNAS, Tegile



Network: TCP/IP, DNS, DHCP, BGP, EIGRP, OSPF, SNMP, VLANs, STP, VTP, GLB, MPLS, NAT/PAT, IPv6, QOS, VoIP, MRTG, Wireshark, Solarwinds, ProCera PacketLogic PL8720

Cisco: Catalyst 6509-E, 3750-E, 4506-E, Nexus 7k, 5k, 2k, ASR1006, ASA5580, ACE 4710, WISM2, MSE, NAM, LMS, NCS, ANM, ACS, IOS, UCS, CSM, Prime Infrastructure, VSS

Projects of note

Retail Customer

- Designed and implemented data center VM migration for retail customer using HCX. Migration of over 200+ VM's
- Determined Application dependencies and networking requirements for the migration of applications.

Cleveland State University

Cleveland, OH

- Designed and implemented data center networks using the following hardware: Cisco 6509-E Sup2T VSS core, 4510R+E, 4506-E Sup8-E and 3850 access switches, Nexus 7K, 5K, and 2K data center, Cisco ASR1006 BGP, 8500 wireless controllers, Ace 4710, ASA 5585-X and Cisco UCS chassis with B200M3 blades
- Designed and implemented the IPv4 and IPv6 addressing structure for CSU's LAN/WAN
- Designed and implemented BGP peerings with ISPs for redundant WAN connectivity.
- Led project to virtualize standalone x86 servers to a Cisco UCS platform running VMware ESXi 5.1 with shared NFS and FC storage
- Designed and implemented enterprise wide network management solution to monitor, track and manage the network. The system is web based and manages vendor service cases, projects, copper and fiber cables, documentation, parts and equipment inventories, work orders and switches. It also allows the network team to quickly deploy a new access switch by automatically configuring the switch based on predefined templates. NCM utilizes IIS and SQL server and was developed using ASP, VBScript, JavaScript and HTML
- Designed and implemented the enterprise wide IP address management solution. The IPAM solution tracked and controlled all DHCP and DNS entries and provided DNS load balancing where needed.



- Designed and implemented a diskless Linux/Windows Network Sniffer Appliance (NSA) system. The appliances can be deployed anywhere to perform monitoring and performance analysis functions.

PBS

Springfield, VA

- Assist in network migration from Cisco to HP
- Design and implement DR plan

National Academy of Sciences

Vienna, VA

- Network Assessment in preparation of hardware refresh
- Network technology refresh utilizing Cisco catalyst switches

Consolidated Precision Products

Cleveland, OH

- ASA and Barracuda Assessment of all of their sites

PNC

Pittsburgh, PA

- VMware NSX deployment and integration on 4 new pods

Oakland Community College

Auburn Hills, MI

- Installation and configuration of Cisco Nexus 5k
- Configuration and integration of Cisco UCS with Nexus 5k

Central Ohio Transport Authority (COTA)

Columbus, OH

- High speed wireless bridge design and implementation

Gateway School District

Monroeville, PA

- Network Assessment in preparation of hardware refresh
- Network technology refresh utilizing Cisco catalyst switches

Celina Insurance

Celina, OH

- Cisco ASA evaluation and redesign
- Cisco IPS/IDS implementation and configuration

Middlefield Bank

Middlefield, OH

- Network Assessment to review network design, routing optimization, and QOS strategy
- Remediation of critical findings

Professional Experience

AdvizeX Technologies, Independence, Ohio

Network Delivery Consultant - March 2014 - Present



- Enable clients to maximize their return on investment in data center virtualization, collaboration, security, mobility and networking technology.
- Implement best practices in service delivery- design preparation and review, implementation strategy and process, documentation and operational support preparation
- Develop/drive business & technical relationships with partners, demonstrating expertise and leadership in their solutions
- Create and implement Statements of Work
- Design and implement highly complex networks internationally for Enterprise clients
- Design and implement data center environments deploying Cisco Nexus 7k, 5k, & 2k hardware
- Design and implement data center environments deploying HPC hardware
- Design and implement network security strategies using Cisco ASA technology

Cleveland State University, Cleveland, Ohio

Senior Network and Telecommunications Specialist - June 1990 – Feb 2014

- Design, deploy and manage a large enterprise data/voice Cisco network which consists of 6509-E VSS core routers/switches, Catalyst 3750, 4506 and 6509 access switches, ASA-5580 firewalls, ACE-4710 load balancers, 6509-E BGP router and Procera PacketLogic PL8720.
- Design, deploy and manage a large Cisco wireless infrastructure including 1200 access points, WISM2 controllers, one MSE and Cisco NCS for management
- Design, deploy and manage the network team's computing platforms which consists of Cisco UCS, storage systems and customized programming needs
- Design, deploy and manage CSU's WAN connections to multiple ISPs using BGP
- Develop, implement and test disaster recovery plans and procedures

Systems Programmer – June 1988 to June 1990

- Technical project leader and programmer on the NOTIS (library automation) project

City of Cleveland, Cleveland, Ohio

COBOL CICS/Batch Programmer - June 1985 – June 1988

- Developed CICS COBOL programs to support the City of Cleveland Utilities Department

Morgan Jackson

Consultant Background

Morgan Jackson has extensive experience in systems architecture design, planning, implementation and management. Most recently he has focused on the delivery of advanced solutions built converged/hyperconverged architectures with VMware vSphere, NSX, VCF and vRealize Infrastructure for SDDC.

Morgan has provided technical expertise in a variety of industries including service providers, manufacturing, government, construction, healthcare, retail, call center, and financial. Across these environments he has performed infrastructure design, deployment and management; desktop deployment and management; project management; process improvement; and training.

Morgan's experience includes:

- ❑ Architecture and delivery of advanced solutions including VMware vSphere, NSX-V/NSX-T, VMware Cloud Foundation and vRealize Suite, Horizon/View, and SRM.
- ❑ Deployment and implementation of Dell/EMC/VCE Converged/Hyperconverged Infrastructure solutions.
- ❑ Large scale data center virtualization.
- ❑ Best practice design, implementation and upgrade of Active Directory and Exchange.
- ❑ Project management and management of process improvement initiatives.

Technical Expertise

- ❑ VMware vSphere
 - ❑ VMware NSX-V and NSX-T
 - ❑ VMware Cloud Foundation (VCF)
 - ❑ VMware vRealize Suite and SDDC Infrastructure
 - ❑ VMware Site Recovery Manager
 - ❑ Converged/Hyper-Converged Infrastructure systems
 - ❑ Cisco Unified Computing System (UCS)
 - ❑ Microsoft Windows and Active Directory
 - ❑ HP BladeSystem and Virtual Connect
 - ❑ Dell/EMC storage
 - ❑ Cisco and HP networking
 - ❑ Cisco and Brocade SAN
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Certifications/Badges

- ❑ VMware
 - VCIX/VCAP – Networking Virtualization (NV)
 - VCIX/VCAP – Data Center Virtualization (DCV)
 - VCP – Cloud Management and Automation (CMA)
 - NSX Livefire – Advanced Implementation
- ❑ Cisco
 - CCNP Data Center
- ❑ Dell/EMC/VCE
 - VxRail Appliance Deployment and Implementation
 - VCE Converged Infrastructure Master Implementation Engineer
 - EMC Implementation Engineer – Symmetrix Specialist
- ❑ Nutanix
 - Certified Master 5 – Multicloud Infrastructure
- ❑ Microsoft
 - Microsoft Certified Systems Engineer
- ❑ HP
 - HP Master Accredited Systems Engineer

Selected Project Engagement Experience

New York Power Authority (NYPA) – White Plains, NY

- ❑ Designed and implemented a full VMware SDDC stack solution for a multi-site infrastructure upgrade
- ❑ NSX-T 2.5 on ACI with planned upgrade to 3.X and Federation
 - Microsegmentation of applications using NSX-T
- ❑ vRealize Suite
 - vRealize Automation 8.X
 - vRealize Operation
 - Lifecycle Manager/WorkspaceOne Access

New York Department of IT and Technology (DoITT) – New York, NY

- ❑ Designed and implemented the NSX-T on ACI and VCF architecture for a VCF on VxRail deployment which will support datacenter automation tools.
 - ❑ VCF 4.x, NSX-T 3.X
 - ❑ vRealize Automation 8.X
-

Pittsburgh Public Schools – Pittsburgh, PA

- ❑ Deployed VCF 4.X on Dell Ready Nodes in place of an existing VCF 2.X platform
- ❑ Re-architected the physical switching to support updated VCF requirements

New York Department of Education (NYCDOE) – New York, NY

- ❑ Designed and implemented the NSX-T on ACI and VCF architecture for a VCF on VxRail multi-datacenter upgrade project.
- ❑ VCF 4.x, NSX-T 3.X

Healthcare Association of New York State – Rensselaer, NY

- ❑ Designed and implemented a Cross-vCenter NSX-V solution to provide a workload mobility and failover solution for a multi-site datacenter refresh.
- ❑ Deployed UCS 63XX series Fabric Interconnect clusters running vSphere 6.7

Ascena Retail Group – Etna OH

- ❑ Designed and implemented an automation solution based on VMware vRealize Automation Suite supporting standardized deployment of Windows and Linux VMs with integration to AD, Infoblox, and Satellite.
- ❑ Re-architected a multi-site, multiple UCS domain infrastructure leveraging UCS Central.
- ❑ Assisted in a company-wide upgrade of vSphere 5.X to 6.0, including standardization of ESXi deployments and implementation of Enhanced Linked Mode vCenter installation.

VCE, The Virtual Computing Environment Company – Franklin MA

- ❑ Deployed all models of Vblocks to a wide variety of customers and industries.
 - ❑ Designed and implemented a 3,000 desktop VMware View Desktop as a Service solution on Vblock for an international Service Provider.
 - ❑ Designed and implemented Site Recovery Manager solutions on Vblock infrastructures.
 - ❑ Architected and implemented stretched cluster solutions on Vblock using EMC VPLEX Metro clustering.
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Dawn Foods – Jackson MI

- ❑ Implemented a Cisco UCS/EMC VMAX installation in a production/DR architecture supporting SAP.
- ❑ Designed and deployed a VMware vSphere and Site Recovery Manager solution using VMAX SRDF replication.

WellPoint/Anthem – Richmond VA

- ❑ Implemented a Cisco UCS solution running VMware vSphere and utilizing EMC Celerra/Centera storage to host an EMC SourceOne Email Archive solution for over 50,000 mailboxes.

Lawrenceburg Distillers, Inc. – Lawrenceburg IN

Completed a full data center upgrade including:

- ❑ Upgrade of Active Directory from 2003 to 2008 with forest migration.
- ❑ Upgrade of Exchange from 2003 to 2010.
- ❑ Multi-site implementation of HP EVA storage, using HP Continuous Access EVA replication.
- ❑ Upgrade of VMware vSphere/ESX infrastructure.
- ❑ Implementation of a DR solution using VMware Site Recovery Manager.
- ❑ Implementation of VMware View in support of a user training center.

Campbell-Ewald – Warren MI

- ❑ Planned and executed a multi-site Active Directory upgrade and an upgrade of Exchange 2003 to 2010 supporting over 1,500 Windows, Mac, and mobile clients.
- ❑ Implemented an HP EVA storage system to support MS Exchange.

Work Experience

2009 – Present Rolta AdvizeX

Senior Delivery Consultant, Virtualization

- ❑ Provide technical and consultative leadership to deliver virtualization, automation, and converged/hyper-converged infrastructure solutions.

- ❑ Deployment and Implementation Engineer for VMware vSphere/vRealize/SDDC, Dell/EMC/VCE converged and hyper-converged solutions, Cisco server and network hardware, HP server and storage hardware and related technologies.
- ❑ Develop technical strategies to deliver solutions and services which support customers' business objectives.

2008 – 2009 Alliance Data Systems / Honda of America Manufacturing

Technical Manager / Systems Engineer

Alliance Data Systems:

- ❑ Implemented VMware vSphere in a multi-site production/DR architecture.
- ❑ Implemented HP Storage Mirroring for real-time replication of virtual machines.
- ❑ Developed a migration and growth plan for storage.

Honda of America Manufacturing:

- ❑ Deployed HP c7000 BladeSystems with Virtual Connect at multiple data centers.
- ❑ Implemented HP Virtual Connect for BladeSystem connectivity.
- ❑ Standardized VMware ESX installations across sites and tuned for performance.

1999 – 2007 OhioHealth Group

Director of Information Systems / Manager of Systems Environment

- ❑ Implemented VMware ESX and executed migration from physical servers.
 - ❑ Migrated messaging platform from Lotus Notes/Domino to Microsoft Exchange.
 - ❑ Planned and executed migration from Novell/Windows/HP-UX environment to a Windows 2003 AD domain using Samba to support HP-UX interoperability.
 - ❑ Implemented Group Policy for desktop and user management.
 - ❑ Deployed Citrix Presentation Server for remote application access.
 - ❑ Designed and implemented an automated data transfer process providing secure and efficient information exchange with business partners, including HIPAA compliant EDI.
 - ❑ Architected and managed implementation of a business-wide audit application to track and report on data quality, as well as a contract tracking database maintaining information on contract arrangements across multiple lines of business.
 - ❑ Managed consolidation of three disparate database systems into one Oracle installation, and subsequent migration from Oracle to SQL Server.
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1997 – 1999 Defense Supply and Construction Center

Systems Engineer

- ❑ Supervised a team of network administrators managing Windows NT servers running MS BackOffice platforms.
- ❑ Assisted in the successful transition from multiple disjoint local networks to a Windows domain model supporting over 3,500 end users.
- ❑ Championed the use of an image-based deployment for Windows 95 desktops and led the team which implemented the solution.
- ❑ Led the Y2K assessment effort for Windows server platforms and assisted in the remediation of over 600 applications.

1992 – 1997 Oles, Kirch & Associates, CPAs

Systems Consultant / Network Administrator

- ❑ Provided technical consulting services to clients and administered the in-house Novell network supporting Windows and Macintosh clients.
- ❑ Designed, deployed, and supported small-business networks for the firm's clients.
- ❑ Worked with the Manager of Government Accounting to develop and market an application that automated GAAP conversions for Ohio school districts.

1988 – 1991 IBM Corporation

Development Engineer

- ❑ Designed, prototyped, and tested hardware peripherals for highly-parallel mainframe computing platforms.
 - ❑ Member of an engineering team that successfully designed and delivered a prototype large-scale shared memory device for mainframe-class supercomputers.
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Melvin Lewis

VMware Automation Consultant specializing in VMware vRealize Automation and Orchestrator.

Professional Services Experience

Partners Health

- ❑ Create workflow to migrate IPAM Host Record entries (Infoblox)
- ❑ Lead the vRA 7 to vRA 8 Migration Project
- ❑ Developed Azure Cloud Deployment Process and Blueprint

Novartis

- ❑ Lead vRA 7 to vRA 8 Migration Project (on going)

International Papers

- ❑ Finalize the vRA 7 to vRA 8 Migration Project

Certifications

- ❑ VCP – Data Center Virtualization 2021
- ❑ VCP – Cloud Management and Automation 2021
- ❑ ITIL Foundation Level

Experience

Enterprise System Engineer, Cleveland Clinic

Design, Develop, and Maintain Automation Tasks, Workflows, Web Applications and other tool sets used by the Server Engineering Team. Write and Maintain custom reports and report models.

- ❑ Develop an internal request catalog platform used for Orchestration and Automation
- ❑ Develop and Maintain an internal CMDB for Server, Storage, and Enterprise Application information

- ❑ Develop Sync Engines (data integrations) to Maintain data integrity with in our CMDB
- ❑ Maintain automated Server Build with integrations to vSphere, Cisco UCS, CMDB, Backup, and Patching
- ❑ Develop automated Server Deployment to the external cloud vendors (AWS vSphere, Google Cloud)
- ❑ Experienced PowerShell 2.0, 3.0, 4.0 and 5.0 Scripting
- ❑ Collaborate with other teams to help them automate their infrastructure and business processes
- ❑ Developed multiple Automation Workflows with Cisco Process Orchestrator and Symantec Workflow
- ❑ API Integration Experience (RESTful and SOAP Web Service)
- ❑ ASP.NET Development in MVC and Web Forms
- ❑ Experienced using JavaScript, jQuery and Bootstrap (HTML5 CSS3)
- ❑ Lead as Iteration Manager in SCRUM inspired Sprints (Jira)
- ❑ Experience with CI/CD concepts and tools (Jenkins / GitLab)
- ❑ Manage and maintain multiple Web Sites, Web Services, Shell Programs, Scripts, and Workflows
- ❑ Develop and Maintain automate server inventory
- ❑ Develop and Maintain an internally developed dashboard
- ❑ Give presentations and training sessions on products developed and implemented
- ❑ Experience with Code Repositories such as GitLab and Team Foundation Services (TFS)
- ❑ Experienced using Visual Studio 2005/2008/2012/2013/2015/2017
- ❑ Experienced in SQL 2000, 2005, 2008 and 2012
- ❑ Experienced in SQL Reporting Services 2005 and 2008
- ❑ Participated in Disaster Recovery exercises
- ❑ Experienced supporting Windows 2000, 2003, 2008, 2012 and 2016 Servers

Top Skills

- ❑ Process Automation
 - ❑ Process Orchestration
 - ❑ Data Integration
 - ❑ Server Virtualization
 - ❑ Server Provisioning
 - ❑ Software Development
 - ❑ HTML5 / jQuery / CSS
 - ❑ Microsoft SQL Server
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Training

- ❑ vRealize Automation
- ❑ vRealize Orchestrator
- ❑ VMware vSphere: Install, Configure, Manage [V7]
- ❑ VMware Tanzu Kubernetes Grid: Install, Configure, Manage [V1.0]
- ❑ VMware Tanzu Mission Control: Management and Operations 2020

Languages

- ❑ Able to speak Spanish and English fluently
-



APPENDIX D – DELL SUPPORT PRO PLUS

Dell EMC ProSupport Plus for Enterprise



Up to
31%
fewer issues*

Adopt complex technologies with confidence.

Critical systems deserve our best support.

ProSupport Plus for Enterprise is enterprise-class support that is designed to proactively improve the performance and stability of your critical systems through environmental intelligence and the right expertise for your organization.

It is designed to not only get you back up and running quickly, but also help you get ahead of problems before they happen. You'll have the freedom to adopt complex technologies with confidence, knowing Dell Technologies' best resources are with you every step of the way.

Improve the
performance of
critical systems and
accelerate your IT
transformation.

Choose ProSupport Plus:

- Immediate advanced troubleshooting from an engineer that understands the entire Dell Technologies infrastructure solutions product portfolio
- An assigned Service Account Manager - your #1 support advocate, ensuring you get the best possible proactive and predictive support experience
- 3rd party software support - we are your single point of accountability for any eligible software installed on your ProSupport Plus system, whether you purchased it from us or not
- Predictive analysis for issue prevention and optimization enabled by SupportAssist and Secure Remote Services
- Proactive monitoring, issue detection, notification and automated case creation for accelerated issue resolution enabled by SupportAssist and Secure Remote Services
- Semiannual systems maintenance - keep your ProSupport Plus systems up to date with installation of latest firmware BIOS and drive updates to improve performance and availability

Proactive support for critical systems

Benefits:

- Adopt complex technologies with confidence by relying on our experts
- Improve performance and stability with automated proactive and predictive recommendations
- Maximize workload availability with automated support enabled by SupportAssist and Secure Remote Services



Experts

- Assigned Service Account Manager
- Priority access to specialized support experts



Insights

- Proactive assessments and performance recommendations
- Predictive issue detection
- Semiannual systems maintenance



Ease

- 3rd party software support
- Hypervisor, operating environment and OS support
- Automated case creation with notification

Feature	Basic	ProSupport	ProSupport Plus
Remote technical support	9x5	24x7	24x7
Covered products	Hardware	Hardware Software	Hardware Software
Onsite hardware support	Next business day ¹	Next business day or 4hr mission critical	Next business day or 4hr mission critical
3 rd party collaborative assistance		•	•
Self-service case initiation and management		•	•
Access to software updates		•	•
Proactive storage health monitoring, predictive analytics and anomaly detection with CloudIQ and the CloudIQ mobile app ²		•	•
Priority access to specialized support experts			•
Predictive detection of hardware failures ²			•
3 rd party software support			•
An assigned Service Account Manager			•
Proactive, personalized assessments and recommendations			•
Proactive systems maintenance			•

For more information, contact your Dell Technologies sales representative

¹Onsite Response not available for high-end storage, data protection or converged products with Basic Hardware Support.

²Certain restrictions apply. View service description for product availability and details.

Availability and terms of Dell Technologies services vary by region and by product. [For more information, please view our service descriptions.](#)



APPENDIX E – DELL TRAINING SUBSCRIPTION



Dell EMC Customer Education

Individual Subscription Options

INDIVIDUAL SUBSCRIPTION OPTIONS



A subscription is the most flexible and cost-effective purchase option to achieve unique training goals and accommodate individual learning styles. Dell EMC Education Services offers two options:

- Customer Subscriptions
- v-Subscriptions

Assigned per individual, both subscription options provide access to our broad library of training for 1 year from date of purchase.

To select the best option to bring you as a manager or individuals on your team up to speed, determine your unique training goals and individual learning style.

Is a Full Subscription right for you?

The Challenge

You are managing a full-scale data center transformation consisting of products and technologies from numerous vendors. While the IT professionals on your team are talented in their area of expertise, each will need in-depth hands-on training at an individual level to develop the skills that will enable them to optimize performance, maximize ROI and accelerate time to productivity.

Individuals on your team are also looking to gain certification to validate their expertise.

The Solution

A Full Subscription provides an individual maximum flexibility to achieve a variety of training goals and the most options to accommodate any learning style. Most courses align with Dell EMC Proven Professional certification.

We offer two Full Subscription options: one which includes On-demand Labs and one without.

[LEARN MORE](#)

Best value for those who

- Plan to develop expertise in one or more technology segments
- Plan to take a vendor-neutral approach to information storage planning and design
- Retain knowledge best through live interactions with instructors and peers
- Plan to validate their expertise by becoming certified in a specific product or technology



Is a v-Subscription right for you?

The Challenge

You are known as the go-to IT person in your area of expertise. However, your organization is transitioning to new, emerging technologies that will impact your existing skill set. This presents skills development challenges to you on multiple fronts; some budgetary, some purely time available to pursue classroom training. The ability to take training online, on-demand is a high priority for you. You are also looking to get certified on Dell EMC products and technologies.

The Solution

A v-Subscription enables the individual to get on-demand training and pursue certifications in multiple technologies anytime, anyplace. Ideal for those on a tight schedule and budget.

We offer two v-Subscription options: one which includes On-demand Labs and one without.

[LEARN MORE](#)

Best value for those who

- Plan to specialize in one or more segments of Dell EMC-specific solutions and technologies
- Must quickly develop Dell EMC technology skills but are unable to attend live courses
- Retain knowledge best through self-paced learning modes
- Plan to validate their expertise by becoming certified in a specific product or technology

Purchase Options

A Subscription is the most cost-effective purchase option for an individual or a team to achieve training goals. Assigned per individual, Subscriptions provide flexibility to accommodate individual learning styles.*

	Full Subscription with ODL	Full Subscription	v-Subscription with ODL	v-Subscription
Pricing	\$15,000/year	\$12,500/year	\$7,500/year	\$5,000/year
Value cap (\$)	\$27,000	\$27,000	\$12,500	\$12,500
Access to "Open" curriculum courses	✓	✓	✓	✓
Access to Dell EMC product and technology-specific courses	✓	✓	✓	✓
Instructor-Led Training (ILT)	✓	✓	—	—
Online Instructor-Led Training (OILT)	✓	✓	—	—
Video Instructor-Led Training (VILT)	✓	✓	✓	✓
On-demand Labs	✓	—	✓	—

*Please note: Packages, including StarterKits, redeemed via Subscriptions are not eligible to receive exam vouchers.

Delivery modes:

Instructor-Led Training (ILT)—Traditional classroom training, with hands-on labs or case studies, delivered at one of our many training centers worldwide, by a highly qualified Dell EMC instructor.

Online Instructor-Led Training (Online ILT)—A real-time interactive training experience where students participate online to access the instructor-led virtual classroom.

Video Instructor-Led Training (Video ILT)—Top-instructor-led training delivered online, on-demand in streaming format, with an intuitive navigation menu.



Validate your skills
as an IT professional.
Get Proven.

Please visit <http://education.emc.com/Certification>
for program details.

Dell EMC
Hopkinton, Massachusetts 01748-9103
1-508-435-1000 in North America 1-866-464-7381
www.DellEMC.com

CONTACT US

Engage your local Education Account Manager for local pricing information and scheduling classes.

Online: <http://education.emc.com/content/purchase>
Phone: +1 888 362 8764 (US)



Connect with Our Community!
education.EMC.com/ProvenCommunity



Follow Us on Twitter
[@DellEMCLearning](https://twitter.com/DellEMCLearning)



Like Us on Facebook!
facebook.com/ProvenProfessional



APPENDIX F – DELL EMC RESIDENCY

Dell EMC Residency Services



99.5% of businesses recognize **direct value from resident engineers** across IT and business outcomes. Among those, almost half saw increased revenue as a result.

Trusted technologists with validated expertise and skills

To keep pace with change, increase resiliency and create competitive advantage, organizations should embrace bold IT transformation strategies. But implementing new solutions in a way that drives value back to the business, without deterring everyday operations, poses significant challenges for many organizations.

Residency Services provide specialized experts to help organizations in a number of ways, including:

- Drive transformation initiatives and integration at scale
- Deliver accelerated adoption of new technology
- Expertly pair solutions to the unique business environment
- Keep IT infrastructure running at its peak

With a broad range of specialties and consumption models, Residency is your perfect match to drive future growth. And, Residency Services have been found to deliver significant, measurable benefits.

Key benefits:

- **50%** improvement in technology performance
- Increased technology utilization by **47%**
- **40%** reduction in cost of IT service delivery
- Improvement in IT staff efficiency by **45%**
- **23** fewer incidents per month
- **9** weeks saved during technology transitions

Set your business up for future success and growth

Unmatched expertise

Residents are specialized experts with:

- Validated expertise across Dell EMC infrastructure & platform solutions
- Extensive training and testing tracked for each resident
- Education and certifications that evolve to keep pace with shifting technologies and needs

Industry Standard

Top 10

Ranking in Pearson VUE Value of IT Certification survey

Unleash the potential of your technology

TECHNOLOGY TRANSITION & OPTIMIZATION

- Primary & Unstructured Data Storage
- Data Protection
- Server
- Networking
- Converged Infrastructure
- Hyperconverged Infrastructure
- Dell Technologies Cloud Platform



PLATFORM & SOLUTION TRANSFORMATION

- Multicloud Infrastructure
- Business Resiliency
- Data Center Modernization
- Cloud Native Apps
- Application Optimization
- Program Management
- Digital Workplace
- Virtual Desktop
- Communication & Collaboration

Experience the Perfect Match

Individualized service supported by an extensive global network with utmost resource flexibility

Available for in-person or virtual engagement

- Onsite experts provide face-to-face interaction for a more personalized experience and are available in local languages
- Remote experts available in over 100 countries
- Short-term engagement options (1 & 2 week minimums) for remote service

Rigorous Resource Selection Process

We carefully match the right resource to each unique customer

To learn more, contact your local representative or authorized reseller, or visit delltechnologies.com/residency



APPENDIX G – DELL VMWARE RESIDENCY

VMWARE RESIDENT CONSULTING SERVICES

Strengthen Your On-Site Team with VMware Resources

AT A GLANCE

VMware Resident Consulting Services provide you with seasoned VMware consultants, carefully matched to your requirements, that become embedded, integral members of your on-site team for as little as a week or as long as you need them.

Directed and managed by you, our resident consultants bring VMware technology expertise and best practices gained from hands-on experience and the collective knowledge of VMware Professional Services to help you reach your desired IT and business outcomes faster.

GET STARTED

Reach out to your Client Solutions Executive to learn more about how a VMware Resident Consulting Services can help you reach your goals.

GAIN A LASTING EDGE

VMware Professional Services guides your teams through the journey of digital transformation, helping you build and maintain momentum.

Our broad expertise, deep knowledge of VMware technology and concentrated focus on your specific challenges enables you to reduce risk and complexity.

Accelerate adoption. Strengthen your team's capabilities. And sustain success. We help you unleash the full value of people, process and technology, so your organization can take confident strides toward future opportunities.

Leverage Our Experts to Reach Your Goals Faster

Whether you need help for just a week or a few months, VMware Resident Consulting Services are a flexible way to add experienced VMware consultants to your team. Call on them to help you accelerate project timelines, overcome challenges, empower your team via knowledge transfer, basically fill any gap where additional VMware knowledge and best practices would be useful.

You're in Charge: Set the Direction, and We'll Make a Match

Our resident consultants are directed and managed by you; so tell them what you'd like to achieve and they will help you get there. You may book residency services in increments of 5 days that must be used consecutively.

Our ready workforce has a wide range of skill sets across the entire VMware portfolio of solutions and will be matched with your organization based on your unique objectives. These senior-level consultants can provide expert installation, configuration, usage, optimization, and administrative assistance. Leverage them for tasks such as:

- Making recommendations for service-level and technical improvements that can encompass environments
- Providing product-specific knowledge transfer to your engineering teams and operational teams
- Assisting with development and documentation of standard operating procedures for your environment
- Performance monitoring and tuning

Our consultants are armed with best practices that will help you expedite project completion, improve operational reliability and efficiency, and build the self-sufficiency of your team.

Frequently Asked Questions

Q. I need assistance with multiple VMware technologies. Will I need a resident consultant for each technology?

A. Not necessarily. The number and type of resident consultants that will best meet your needs will be determined via a discussion with VMware Professional Services Sales.

Q. Can a resident help with design and implementation?

A. No, resident consultants are not focused on developing design and architecture.

Q. Can I add a resident to another service?

A. Yes. The resident service can be added as a separate work stream to a primary service.



APPENDIX H – DELL OEM ERASURE SERVICES

Service Brief

Dell EMC Data Sanitization for Enterprise

Introduction

This document and its attachments (the "Service Brief") outline the service features for Data Sanitization Services for Enterprise, (the "Service(s)"). Dell EMC¹ Services ("Dell") is pleased to provide these Services in accordance with this Service Brief. Your quote, order form or other mutually-agreed upon form of invoice or order acknowledgment (as applicable, the "Order Form") will include the name of the Service(s) and available service options that you purchased. For additional assistance or to request a copy of your service contract(s), contact Dell Technical Support or your sales representative. For additional assistance, or to request a copy of your governing agreement applicable to the Services (the "Agreement"), contact your Dell EMC sales representative. For a copy of your agreement with your applicable Dell EMC reseller, contact that reseller.

Dell Services Terms & Conditions

This Service Brief is entered between you, the customer ("you" or "Customer"), and the Dell or EMC entity identified on your invoice for the purchase of this Service. This Service is provided subject to and governed by Customer's separate signed master services agreement with Dell that explicitly authorizes the sale of this Service. In the absence of such agreement, depending on Customer's location, this Service is provided subject to and governed by either Dell's Commercial Terms of Sale or the agreement referenced in the table below (as applicable, the "Agreement"). Please see the table below which lists the URL applicable to your Customer location where your Agreement can be located. The parties acknowledge having read and agree to be bound by such online terms.

Customer Location	Terms & Conditions Applicable to Your Purchase of Dell Services	
	Customers Purchasing Dell Services Directly from Dell	Customers Purchasing Dell Services Through an Authorized Dell Reseller
United States	www.dell.com/CTS	www.dell.com/CTS
Canada	www.dell.ca/terms (English) www.dell.ca/conditions (French-Canadian)	www.dell.ca/terms (English) www.dell.ca/conditions (French-Canadian)
Latin America & Caribbean Countries	Local www.dell.com country-specific website or www.dell.com/servicedescriptions/global .*	Local www.dell.com country-specific website or www.dell.com/servicedescriptions/global .*
Asia-Pacific-Japan	Local www.dell.com country-specific website or www.dell.com/servicedescriptions/global .*	Service Briefs and other Dell service documents which you may receive from your seller shall not constitute an agreement between you and Dell but shall serve only to describe the content of Service you are purchasing from your seller, your obligations as a recipient of the Service and the boundaries and limitations of such Service. As a consequence hereof any reference to "Customer" in this Service Brief and in any other Dell service document shall in this context be understood as a reference to you whereas any reference to Dell shall only be understood as a reference to Dell as a service provider providing the Service on behalf of your seller. You will not have a direct contractual relationship with Dell with regards to the Service described herein. For the avoidance of doubt any payment terms or other contractual

¹ "Dell EMC", as used in this document, means the applicable Dell sales entity ("Dell") specified on your Dell Order Form and the applicable Dell EMC sales entity ("Dell EMC") specified on your Dell EMC Order Form. The use of "Dell EMC" in this document does not indicate a change to the legal name of the Dell or Dell EMC entity with whom you have dealt.

Customer Location	Terms & Conditions Applicable to Your Purchase of Dell Services	
	Customers Purchasing Dell Services Directly from Dell	Customers Purchasing Dell Services Through an Authorized Dell Reseller
		terms which are by their nature solely relevant between a buyer and a seller directly shall not be applicable to you and will be as agreed between you and your seller.
Europe, Middle East, & Africa	<p>Local www.dell.com country-specific website or www.dell.com/serviceBriefBriefs/global. *</p> <p>In addition, customers located in France, Germany and the UK can select the applicable URL below:</p> <p>France: www.dell.fr/ConditionsGeneralesdeVente</p> <p>Germany: www.dell.de/Geschaeftsbedingungen</p> <p>UK: www.dell.co.uk/terms</p>	Service Briefs and other Dell service documents which you may receive from your seller shall not constitute an agreement between you and Dell but shall serve only to describe the content of Service you are purchasing from your seller, your obligations as a recipient of the Service and the boundaries and limitations of such Service. As a consequence hereof any reference to "Customer" in this Service Brief and in any other Dell service document shall in this context be understood as a reference to you whereas any reference to Dell shall only be understood as a reference to Dell as a service provider providing the Service on behalf of your seller. You will not have a direct contractual relationship with Dell with regards to the Service described herein. For the avoidance of doubt any payment terms or other contractual terms which are by their nature solely relevant between a buyer and a seller directly shall not be applicable to you and will be as agreed between you and your seller.

* Customers may access their local www.dell.com website by simply accessing www.dell.com from a computer connected to the Internet within their locality or by choosing among the options at Dell's "Choose a Region/Country" website available at <http://www.dell.com/content/public/choosecountry.aspx?c=us&l=en&s=gen>.

Customer further agrees that by renewing, modifying, extending or continuing to utilize the Service beyond the initial term, the Service will be subject to the then-current Service Brief available for review at www.dell.com/servicedescriptions/global.

To the extent that any terms of this Service Brief conflict with any terms of the Agreement, the terms of this Service Brief will prevail, but only to the extent of the specific conflict, and will not be read or deemed to replace any other terms in the Agreement which are not specifically contradicted by this Service Brief.

By placing your order for the Services, receiving delivery of the Services, utilizing the Services or associated software or by clicking/checking the "I Agree" button or box or similar on the Dell.com website in connection with your purchase or within a Dell software or Internet interface, you agree to be bound by this Service Brief and the agreements incorporated by reference herein. If you are entering this Service Brief on behalf of a company or other legal entity, you represent that you have authority to bind such entity to this Service Brief, in which case "you" or "Customer" shall refer to such entity. In addition to receiving this Service Brief, Customers in certain countries may also be required to execute a signed Order Form.

The Scope of This Service(s)

A. Definitions.

1. **"Confirmation of Disposal"** will mean the document provided by Dell to the Customer which documents that all drives or network switches were sanitized in accordance with Section 4.2 of Dell's Responsibilities,
2. **"Data Sanitization"** will mean the certified data sanitization process for data bearing devices using methods aligned to the National Institute of Standards and Technology Special Publication 800-88 Revision 1 "Guidelines for Media Sanitization" (**"NIST 800-88 r1"**).
3. **"Data Sanitization Summary"** will mean the serialized inventory list of the Equipment and Equipment drives attempted to be sanitized by Dell during each Site visit.
4. **"Data Sanitization Workspace"** will mean a safe and sufficient workspace at the Site where the Data Sanitization Services will be performed.
5. **"Equipment"** will mean all of the Pieces that the Customer has provided to Dell in connection with the Services.
6. **"Piece"** will mean each data bearing device or component (collectively referred to herein as **"Equipment"**) as set forth on your Order Form.

7. **“Drive”** will mean all types of data storage, including but not limited to HDD & SSD variants, of enterprise products. See [Table 1.0](#) for drive information.

8. **“Serial Number”** will mean the unique identifier assigned to a Piece by the manufacturer.

9. **“Site”** will mean the Customer designated location at which the onsite Data Sanitization is to be performed.

B. Services Expiration (4 Years After Purchase if purchased simultaneously with Equipment that is the subject of the Services on the same Order Form, or 12 months if purchased separately from the Equipment). EXCEPT TO THE EXTENT APPLICABLE LAW REQUIRES OTHERWISE, YOU MAY USE THIS SERVICE DURING THE 4 YEAR PERIOD (IF PURCHASED WITH AND ON THE SAME ORDER FORM AS THE EQUIPMENT THAT IS THE SUBJECT OF THE SERVICES) OR 12 MONTHS (IF PURCHASED SEPARATELY FROM THE EQUIPMENT) FOLLOWING THE DATE OF ORIGINAL PURCHASE (AS APPLICABLE, THE “EXPIRATION DATE”). THE ORIGINAL PURCHASE DATE IS DEFINED AS THE EARLIER OF THE DATE OF THE INVOICE FOR THE SERVICE OR ORDER CONFIRMATION FROM DELL. DELL’S DELIVERY OF THE SERVICE WILL BE DEEMED SATISFIED AFTER THE EXPIRATION DATE EVEN IF YOU DO NOT USE THE SERVICE.

C. Not Transferable. The Service is not transferable by Customer.

D. Service Change or Cancellation. Two (2) business days of notice by the Customer prior to the scheduled date for Services is required for changes or cancellations to avoid additional fees. To cancel the Service, send the request to the Dell account team. If a Pickup has been scheduled by the Customer directly with Dell’s Logistics Provider, the Customer must also cancel the Pickup directly with such Dell Logistics Provider.

E. No Returns. Equipment cannot be returned once Pick Up occurs.

F. Dell Providers. Customer hereby acknowledges and agrees that Dell may utilize affiliates and providers to perform these Services, in whole or in part. From time to time, Dell may change the location where Services are performed and/or the party performing the Services; provided however, Dell shall remain responsible to Customer for the delivery of Services.

G. No Contaminated Products. The Service will not be provided for Equipment that is or has become contaminated or suspected of being contaminated with chemicals, biological agents or other substances that are not integral to the original new Equipment or otherwise associated with normal office environments. Customer is liable for all costs and expenses associated with not informing Dell of any such contamination.

H. Software/Data Backup. DELL HEREBY DISCLAIMS ANY AND ALL LIABILITY FOR ANY RESTORATION OF DATA OR SOFTWARE ON EQUIPMENT (INCLUDING ON ANY CUSTOMER PROVIDED FLASH DRIVE).

I. United States’ Regulation of PHI. For Customers with operations in the United States or who are otherwise subject to the US Health Insurance Portability and Accountability Act (“HIPAA”), Customer warrants and represents that prior to providing Dell access to Equipment which has been used for processing and/or storage of Protected Health Information as defined in 45 C.F.R. Section 160.103 (“PHI”), all PHI on such Equipment has been rendered unusable, unreadable or indecipherable to unauthorized individuals through the use of a technology or methodology specified by the U.S. Secretary of Health (“Secretary”) by either:

1. clearing, purging, or destroying PHI from any electronic media in a manner consistent with NIST Special Publication 800-88, Revision 1, Guidelines for Media Sanitization; or
 2. encrypting PHI as defined in 45 C.F.R. 164.304; or
- Customer shall be responsible for confirming any updated guidance from the Secretary on how to secure PHI in order to render it unusable, unreadable, or indecipherable, to unauthorized individuals and will comply with any applicable guidance as it relates to PHI found on equipment or materials submitted to Dell for processing.

J. Commercially Reasonable Limits to Scope of Service. Dell may refuse to provide Services if, in its opinion, the condition, size or location of the Equipment creates an unreasonable risk to Dell or Dell's Service providers or is beyond the scope of Services. Dell is not liable for any failure or delay in performance due to any cause beyond its control.

K. Optional Services. Optional services (including point-of-need support, installation, consulting, managed, professional, support or training services) may be available for purchase from Dell and will vary by Customer location. Optional services may require a separate agreement with Dell. In the absence of such agreement, optional services are provided pursuant to this Service Brief.

L. Cancellation. Dell may cancel this Service at any time prior to the Expiration Date for any of the following reasons:

- ☐ Customer fails to pay the total price for this Service in accordance with the invoice terms;
- ☐ Customer is abusive, threatening, or refuses to cooperate with the assisting analyst or on-site technician; or
- ☐ Customer fails to abide by all of the terms and conditions set forth in this Service Brief.

If Dell cancels this Service, Dell will send Customer written notice of cancellation at the address indicated on Customer's invoice. The notice will include the reason for cancellation and the effective date of cancellation, which will be not less than ten (10) days from the date Dell sends notice of cancellation to Customer, unless local law requires other cancellation provisions that may not be varied by agreement. If Dell cancels this Service pursuant to this paragraph, Customer shall not be entitled to any refund of fees paid or due to Dell.

M. Geographic Limitations and Relocation. These Services are not available at all locations. Service options, including service levels, technical support hours, and on-site response times will vary by geography and certain options may not be available for purchase in Customer's location, so please contact your sales representative for these details.

N. Limits of Data Sanitization. Dell makes no recommendations regarding the Customer's security needs or representations regarding the effectiveness of one method of data removal over another. It is the Customer's responsibility to protect any confidential or sensitive information contained on its drives recovered by Dell. For more information, please see the [Dell Media Sanitization Statement](#).

O. Service Hours. Subject to local law relating to weekly work hours, unless otherwise listed below, these Services will be performed Monday through Friday during normal Dell business hours, which is from 8:00 AM to 6:00 PM Customer local time ("Business Hours"):

Country	Normal Dell Business Hours
St. Kitts, St. Lucia, St. Vincent, Trinidad, Virgin Islands, Rest of English speaking Caribbean	Monday thru Friday from 7:00 AM to 4:00 PM
Barbados, Bahamas, Belize, Costa Rica, Denmark, El Salvador, Finland, Grand Cayman, Guatemala, Honduras, Jamaica, Norway, Panama, Puerto Rico, Rep. Dominicana, Suriname, Sweden, Turks and Caicos	Monday thru Friday from 8:00 AM to 5:00 PM
Australia, Bermuda, China, Haiti, Hong Kong, Japan, Netherland Antilles, New Zealand, Singapore, Thailand	Monday thru Friday from 9:00 AM to 5:00 PM
Argentina, Ecuador, France, India, Indonesia, Italy, Korea, Malaysia, Mexico, Paraguay, Peru, Taiwan, Uruguay	Monday thru Friday from 9:00 AM to 6:00 PM
Bolivia, Chile	Monday thru Friday from 9:00 AM to 7:00 PM
Middle East	Sunday thru Thursday from 8:00 AM to 6:00 PM

No Service activities will take place outside normal Business Hours or during local holidays unless other arrangements have been made in advance in writing.

The following table lists the applicable system/site limitations for sanitization on Equipment specified below:

Table 1.0

Product	Number of Systems/Site	Within 1 System	Max Drive count
Dell EMC Atmos	1	16 Nodes	960
Dell EMC Avamar	1	16 Nodes	384
Dell EMC Centera	1	16 Nodes	64
Dell EMC CLARiiON	1	All Drives	960
Dell EMC Celerra	1	All Drives	960
Dell EMC Data Domain	1	All Drives	1080
Dell EMC ECS	1	4 Appliances or 16 Nodes	960
Dell EMC DLm	1	All Drives	1080
Dell EMC Isilon, PowerScale	1	16 Nodes	1920
Dell EMC Symmetrix PowerMax VMAX3 AF	1	All Drives	PMAX = 288 VMAX 400K=5670
Dell EMC Unity	1	All Drives	1000
Dell EMC VNX	1	All Drives	1000
Dell EMC VxRail	1	4 Appliances or 16 Nodes	384
Dell EMC VxFlex	1	16 Nodes	384
Dell EMC VxBlock	1	Order Sum of the Parts. Example: 1 Server; 1 MR Storage, etc.	NA
Dell EMC XtremIO	1	4 Bricks	288
Dell EMC PowerOne	1	(1) MX7000 Compute Chassis and (1) Storage system (all drives)	288
Dell EMC IDPA	1	Up to 3 servers, 1 Data Domain system and 1 Avamar Cluster	Data Domain = 1080
Dell EMC PowerProtect X400	1	1 Core Cube, 4 Capacity Cubes	80
Dell PowerEdge Servers	1	16 Servers	384
Dell EqualLogic	1	16 Nodes	384
Dell PowerVault	1	7 drive bays max	336
Dell Compellent	1	16 Enclosure	500
Dell EMC PowerStore	1	All Drives	96
Network Switches	1	Network Switch (*)	N/A
Multivendor	1	Server, CI/HCI	384
	1	Data Protection, Mid-Range Storage, Unstructured Storage	500
	1	High End Storage	288

(*) Dell Sales representative can confirm the specific network switch models in scope for this offer

Dell's Responsibilities

1. Scheduling.

a. Dell will contact the Customer to schedule the Data Sanitization at each Site for a mutually agreeable time during Business Hours. Data Sanitization will generally be scheduled no earlier than ten (10) business days after the date of contact.

2. Data Sanitization

Dell shall:

- a. Arrive at the Site, contact the Customer's Site representative and proceed to the Data Sanitization Workspace;
- b. Record the following information on the Data Sanitization Summary for each System or switch: manufacturer, model number, properly seated and functional drive(s) serial number(s);
- c. Perform the Data Sanitization on each System or switch;
- d. For each System drive or switch on which Data Sanitization is attempted, designate on the Data Sanitization Summary whether the Data Sanitization was successful ("PASS") or unsuccessful ("FAILED");
- e. Remove any drive from a System for which the Data Sanitization was unsuccessful and return such drive to the Customer's Site representative; a tag will be attached to the switch or drive indicating date/time and reason for the failure (if known).
- f. If requested, provide the Customer with a PDF/CSV version of the Data Sanitization Summary on a flash drive (to be provided by the Customer) prior to leaving the Site;
- g. Provide a Data Sanitization Acknowledgement Form to the Customer's Site representative for their review and signature to certify that the Data Sanitization Summary provided in PDF/CSV (in step 2.1.f above) accurately reflects:
 - h. The Switches or System drives that were successfully sanitized ("PASS") and subsequently moved by Dell to a secured storage location designated by the Customer for future Pick Up; and/or
 - i. The Switches or System drives that were not successfully sanitized ("FAILED") and were subsequently returned to the Customer's Site representative for disposition by the Customer.

3. Reporting: Dell shall deliver to the Customer within thirty five (35) business days from the date of Pick Up the following reports via email:

- a. Disposition Report; and
- b. Confirmation of Disposal

Customer Responsibilities

1. General. THE CUSTOMER SHALL BACKUP ANY DATA OR SOFTWARE THE CUSTOMER DESIRES TO RETAIN PRIOR TO EQUIPMENT BEING MADE AVAILABLE TO DELL. Service provided under this Service Brief does not include the restoration of any data or software from Equipment.

2. Data Sanitization

The Customer shall:

- a. Remove/disable all passwords and other access security features and terminate any theft deterrent or laptop tracking software contained within such Equipment from Systems designated for Data Sanitization Services prior to Dell's arrival;
- b. The Data Sanitization Workspace shall at a minimum include:
 - i. Table/desk space, chairs, electrical outlets with adequate lighting;
 - ii. Space adequate to perform concurrent data sanitizations;
 - iii. Sufficient access to electrical power at voltage as applicable for the service and country in scope, and as advised by Dell upon scheduling
- c. Consolidate and locate all Systems designated for Data Sanitization Services in the same immediate area as the Data Sanitization Workspace;

- d. Provide a Site representative each day Data Sanitization is scheduled to be performed to direct Dell to the Data Sanitization Workspace and designate the Systems on which Dell should perform the Data Sanitization;
- e. Provide monitors and external power supplies for use with Systems during the Data Sanitization (monitors not required for portable computers);
- f. Provide a secured storage location in the same immediate area as the Data Sanitization Workspace for storage of Systems that were successfully Data Sanitized;
- g. Review the Data Sanitization Acknowledgement form and sign such form to certify the Customer's agreement that the Data Sanitization Summary provided in PDF/CSV (as defined under Dell's Responsibilities, Section 2.1.f. above) accurately reflects: (i) the System drives that were successfully sanitized ("PASS") (ii) the System drives that were not successfully sanitized ("FAILED") and were subsequently returned to the Customer's Site representative for disposition by the Customer;

4. Customer Warranty. The Customer represents and warrants as follows:

- a. The Customer has good title to the data bearing devices free and clear of all liens, claims and encumbrances of any kind;
- b. The Customer has removed all confidential, proprietary, sensitive or other non-public data from all data bearing devices
- c. The Customer is responsible for and has complied with the health and safety requirements and obligations applicable to it in relation to the Site(s) to which Dell or its providers are given access by the Customer, including the Data Sanitization Workspace
- d. If the Customer breaches any of its obligations or warranties outlined in this Service Brief, Dell shall not be obligated to provide the Services or liable for any damages resulting from the Customer's breach. Alternatively, the Customer may incur additional fees and expenses for any resulting additional time or materials, loss or damage incurred by Dell or its providers.

C. Pricing and Payment Terms

The Customer will be charged on a per Piece basis. Refer to Table 1 for per piece limitations.

Pick Up and/or recycling of the Customer's packaging/boxes are not included in the cost of this Service and will incur additional fees.

The Customer hereby agrees to pay the price for each Piece per the applicable Dell order confirmation, as well as any additional fees and costs set forth in this Service Brief. The Customer acknowledges and agrees that Dell shall be entitled to set off amounts due to Dell under this Service Brief against the amounts otherwise payable by Dell to the Customer hereunder.

Additional Fees.

- ☐ Services rendered by Dell for Pieces in excess of the amount ordered will be billed at the per Piece price for the associated Service.
- ☐ Locations in offshore territories, islands and other remote or indirect locations will incur additional fees.
- ☐ Sites requiring access or vehicle restrictions, union labor, time specific or after normal Business Hours will incur additional charges.
- ☐ Sites requiring access or vehicle restrictions, union labor, time specific or after normal Business Hours will incur additional charges.
- ☐ If the Customer, the Site and/or the Equipment, does not conform to the requirements set forth in this

Service Brief, or the Customer is somehow otherwise not ready for the Data Sanitization to be undertaken as scheduled, the applicable Services may need to be rescheduled and/or additional fees will apply.

D. Important Additional Terms

Title and Risk of Loss. Dell or Dell's Logistics Provider will bear the risk of loss or damage to the Equipment after departure from the Pickup Site. Title will be deemed to pass to Dell or Dell's Logistics Provider upon receipt and possession of the Equipment by Dell or Dell's Logistics Provider.

Warranty and Liability. As it relates specifically to the Services provided under this Service Brief only, and despite any conflicting terms in the Agreement, the following terms and conditions apply:

1. **Warranty.** DELL WARRANTS THAT IT WILL PERFORM THE SERVICE WITH COMMERCIALY REASONABLE CARE. DELL MAKES NO OTHER WARRANTY AND DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

2. **Limitation of Liability.** DELL'S AND ITS SERVICE PROVIDERS' LIABILITY FOR SERVICES PROVIDED IN ACCORDANCE WITH THIS SERVICE BRIEF, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH LIABILITY, WILL BE AT ALL TIMES SUBJECT TO THE FOLLOWING LIMITATIONS AND EXCLUSIONS:

a. IN NO EVENT SHALL DELL BE LIABLE (WHETHER IN CONTRACT, TORT OR OTHERWISE) FOR ANY OF THE FOLLOWING: (I) LOST PROFITS, LOSS OR CORRUPTION OF DATA OR SOFTWARE, LOSS OF BUSINESS OR COMPLIANCE WITH THIRD PARTY REQUIREMENTS THAT MAY APPLY TO DATA ON EQUIPMENT, (II) CONSEQUENTIAL, SPECIAL, INDIRECT, INCIDENTAL OR PUNITIVE (IF APPLICABLE) DAMAGES, OR (III) ANY THIRD PARTY CLAIM.

b. DELL SHALL HAVE NO LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) FOR THE SECURITY OR CONFIDENTIALITY OF DATA RESIDING ON EQUIPMENT EXCEPT FOR THE UNAUTHORIZED DISCLOSURE OF DATA FROM A SYSTEM DRIVE WHICH DELL AND/OR ITS SERVICE PROVIDERS' FAILED TO PROPERLY PERFORM THE DATA SANITIZATION AT CUSTOMER'S SITE IN ACCORDANCE WITH THE PROCESSES SET FORTH HEREIN AND SUBSEQUENTLY CERTIFIED SUCH DRIVE AS BEING SUCCESSFULLY SANITIZED ON THE DATA SANITIZATION SUMMARY. IN SUCH CASE DELL SHALL BE LIABLE TO CUSTOMER FOR DIRECT DAMAGES RESULTING FROM SUCH DISCLOSURE UP TO THE LIABILITY CAP SET FORTH IN SECTION D.2.d BELOW.

c. DELL'S MAXIMUM AND SOLE LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR IN CONNECTION WITH ANY CLAIM FOR LOSS OF ANY PHYSICAL ITEM OF EQUIPMENT SHALL IN NO EVENT EXCEED THE VALUATION THEREOF SET OUT IN THE UEPP FOR THE MONTH IN WHICH THE ITEM WAS FIRST DISCOVERED AS LOST.

d. DELL'S AGGREGATE LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) FOR ANY AND ALL CLAIMS OF LIABILITY ARISING OUT OF, OR IN CONNECTION WITH THIS SERVICE BRIEF WITHIN ANY CALENDAR YEAR SHALL NOT EXCEED THE TOTAL AMOUNT OF FEES PAID OR PAYABLE BY CUSTOMER UNDER THIS SERVICE BRIEF IN SUCH CALENDAR YEAR.

DELL DOES NOT LIMIT ITS LIABILITY FOR FRAUD, PERSONAL INJURY OR DEATH ARISING FROM ITS NEGLIGENCE OR ANY OTHER LOSS THAT CANNOT BE LIMITED UNDER APPLICABLE LAW. IN THE EVENT APPLICABLE LAW PROHIBITS IN ANY PART ANY LIMITATION OF LIABILITY IN THIS SERVICE BRIEF, THE PARTIES AGREE THAT SUCH LIMITATION SHALL BE MODIFIED, WITHOUT FURTHER ACTION OF EITHER PARTY, SO AS TO BROADLY APPLY TO THE MAXIMUM EFFECT ALLOWED BY APPLICABLE LAW.

Service Brief

Dell EMC Data Sanitization for Enterprise

Introduction

This document and its attachments (the "Service Brief") outline the service features for Data Sanitization Services for Enterprise, (the "Service(s)"). Dell EMC¹ Services ("Dell") is pleased to provide these Services in accordance with this Service Brief. Your quote, order form or other mutually-agreed upon form of invoice or order acknowledgment (as applicable, the "Order Form") will include the name of the Service(s) and available service options that you purchased. For additional assistance or to request a copy of your service contract(s), contact Dell Technical Support or your sales representative. For additional assistance, or to request a copy of your governing agreement applicable to the Services (the "Agreement"), contact your Dell EMC sales representative. For a copy of your agreement with your applicable Dell EMC reseller, contact that reseller.

Dell Services Terms & Conditions

This Service Brief is entered between you, the customer ("you" or "Customer"), and the Dell or EMC entity identified on your invoice for the purchase of this Service. This Service is provided subject to and governed by Customer's separate signed master services agreement with Dell that explicitly authorizes the sale of this Service. In the absence of such agreement, depending on Customer's location, this Service is provided subject to and governed by either Dell's Commercial Terms of Sale or the agreement referenced in the table below (as applicable, the "Agreement"). Please see the table below which lists the URL applicable to your Customer location where your Agreement can be located. The parties acknowledge having read and agree to be bound by such online terms.

Customer Location	Terms & Conditions Applicable to Your Purchase of Dell Services	
	Customers Purchasing Dell Services Directly from Dell	Customers Purchasing Dell Services Through an Authorized Dell Reseller
United States	www.dell.com/CTS	www.dell.com/CTS
Canada	www.dell.ca/terms (English) www.dell.ca/conditions (French-Canadian)	www.dell.ca/terms (English) www.dell.ca/conditions (French-Canadian)
Latin America & Caribbean Countries	Local www.dell.com country-specific website or www.dell.com/servicesdescriptions/global .*	Local www.dell.com country-specific website or www.dell.com/servicesdescriptions/global .*
Asia-Pacific-Japan	Local www.dell.com country-specific website or www.dell.com/servicesdescriptions/global .*	Service Briefs and other Dell service documents which you may receive from your seller shall not constitute an agreement between you and Dell but shall serve only to describe the content of Service you are purchasing from your seller, your obligations as a recipient of the Service and the boundaries and limitations of such Service. As a consequence hereof any reference to "Customer" in this Service Brief and in any other Dell service document shall in this context be understood as a reference to you whereas any reference to Dell shall only be understood as a reference to Dell as a service provider providing the Service on behalf of your seller. You will not have a direct contractual relationship with Dell with regards to the Service described herein. For the avoidance of doubt any payment terms or other contractual

¹ "Dell EMC", as used in this document, means the applicable Dell sales entity ("Dell") specified on your Dell Order Form and the applicable Dell EMC sales entity ("Dell EMC") specified on your Dell EMC Order Form. The use of "Dell EMC" in this document does not indicate a change to the legal name of the Dell or Dell EMC entity with whom you have dealt.

Customer Location	Terms & Conditions Applicable to Your Purchase of Dell Services	
	Customers Purchasing Dell Services Directly from Dell	Customers Purchasing Dell Services Through an Authorized Dell Reseller
		terms which are by their nature solely relevant between a buyer and a seller directly shall not be applicable to you and will be as agreed between you and your seller.
Europe, Middle East, & Africa	<p>Local www.dell.com country-specific website or www.dell.com/serviceBriefBriefs/global.*</p> <p>In addition, customers located in France, Germany and the UK can select the applicable URL below:</p> <p>France: www.dell.fr/ConditionsGeneralesdeVente</p> <p>Germany: www.dell.de/Geschaeftsbedingungen</p> <p>UK: www.dell.co.uk/terms</p>	<p>Service Briefs and other Dell service documents which you may receive from your seller shall not constitute an agreement between you and Dell but shall serve only to describe the content of Service you are purchasing from your seller, your obligations as a recipient of the Service and the boundaries and limitations of such Service. As a consequence hereof any reference to "Customer" in this Service Brief and in any other Dell service document shall in this context be understood as a reference to you whereas any reference to Dell shall only be understood as a reference to Dell as a service provider providing the Service on behalf of your seller. You will not have a direct contractual relationship with Dell with regards to the Service described herein. For the avoidance of doubt any payment terms or other contractual terms which are by their nature solely relevant between a buyer and a seller directly shall not be applicable to you and will be as agreed between you and your seller.</p>

* Customers may access their local www.dell.com website by simply accessing www.dell.com from a computer connected to the Internet within their locality or by choosing among the options at Dell's "Choose a Region/Country" website available at <http://www.dell.com/content/public/choosecountry.aspx?c=us&l=en&s=gen>.

Customer further agrees that by renewing, modifying, extending or continuing to utilize the Service beyond the initial term, the Service will be subject to the then-current Service Brief available for review at www.dell.com/servicedescriptions/global.

To the extent that any terms of this Service Brief conflict with any terms of the Agreement, the terms of this Service Brief will prevail, but only to the extent of the specific conflict, and will not be read or deemed to replace any other terms in the Agreement which are not specifically contradicted by this Service Brief.

By placing your order for the Services, receiving delivery of the Services, utilizing the Services or associated software or by clicking/checking the "I Agree" button or box or similar on the Dell.com website in connection with your purchase or within a Dell software or Internet interface, you agree to be bound by this Service Brief and the agreements incorporated by reference herein. If you are entering this Service Brief on behalf of a company or other legal entity, you represent that you have authority to bind such entity to this Service Brief, in which case "you" or "Customer" shall refer to such entity. In addition to receiving this Service Brief, Customers in certain countries may also be required to execute a signed Order Form.

The Scope of This Service(s)

A. Definitions.

1. **"Confirmation of Disposal"** will mean the document provided by Dell to the Customer which documents that all drives or network switches were sanitized in accordance with Section 4.2 of Dell's Responsibilities,
2. **"Data Sanitization"** will mean the certified data sanitization process for data bearing devices using methods aligned to the National Institute of Standards and Technology Special Publication 800-88 Revision 1 "Guidelines for Media Sanitization" ("**NIST 800-88 r1**").
3. **"Data Sanitization Summary"** will mean the serialized inventory list of the Equipment and Equipment drives attempted to be sanitized by Dell during each Site visit.
4. **"Data Sanitization Workspace"** will mean a safe and sufficient workspace at the Site where the Data Sanitization Services will be performed.
5. **"Equipment"** will mean all of the Pieces that the Customer has provided to Dell in connection with the Services.
6. **"Piece"** will mean each data bearing device or component (collectively referred to herein as **"Equipment"**) as set forth on your Order Form.

7. **"Drive"** will mean all types of data storage, including but not limited to HDD & SSD variants, of enterprise products. See [Table 1.0](#) for drive information.

8. **"Serial Number"** will mean the unique identifier assigned to a Piece by the manufacturer.

9. **"Site"** will mean the Customer designated location at which the onsite Data Sanitization is to be performed.

B. Services Expiration (4 Years After Purchase if purchased simultaneously with Equipment that is the subject of the Services on the same Order Form, or 12 months if purchased separately from the Equipment). EXCEPT TO THE EXTENT APPLICABLE LAW REQUIRES OTHERWISE, YOU MAY USE THIS SERVICE DURING THE 4 YEAR PERIOD (IF PURCHASED WITH AND ON THE SAME ORDER FORM AS THE EQUIPMENT THAT IS THE SUBJECT OF THE SERVICES) OR 12 MONTHS (IF PURCHASED SEPARATELY FROM THE EQUIPMENT) FOLLOWING THE DATE OF ORIGINAL PURCHASE (AS APPLICABLE, THE "EXPIRATION DATE"). THE ORIGINAL PURCHASE DATE IS DEFINED AS THE EARLIER OF THE DATE OF THE INVOICE FOR THE SERVICE OR ORDER CONFIRMATION FROM DELL. DELL'S DELIVERY OF THE SERVICE WILL BE DEEMED SATISFIED AFTER THE EXPIRATION DATE EVEN IF YOU DO NOT USE THE SERVICE.

C. Not Transferable. The Service is not transferable by Customer.

D. Service Change or Cancellation. Two (2) business days of notice by the Customer prior to the scheduled date for Services is required for changes or cancellations to avoid additional fees. To cancel the Service, send the request to the Dell account team. If a Pickup has been scheduled by the Customer directly with Dell's Logistics Provider, the Customer must also cancel the Pickup directly with such Dell Logistics Provider.

E. No Returns. Equipment cannot be returned once Pick Up occurs.

F. Dell Providers. Customer hereby acknowledges and agrees that Dell may utilize affiliates and providers to perform these Services, in whole or in part. From time to time, Dell may change the location where Services are performed and/or the party performing the Services; provided however, Dell shall remain responsible to Customer for the delivery of Services.

G. No Contaminated Products. The Service will not be provided for Equipment that is or has become contaminated or suspected of being contaminated with chemicals, biological agents or other substances that are not integral to the original new Equipment or otherwise associated with normal office environments. Customer is liable for all costs and expenses associated with not informing Dell of any such contamination.

H. Software/Data Backup. DELL HEREBY DISCLAIMS ANY AND ALL LIABILITY FOR ANY RESTORATION OF DATA OR SOFTWARE ON EQUIPMENT (INCLUDING ON ANY CUSTOMER PROVIDED FLASH DRIVE).

I. United States' Regulation of PHI. For Customers with operations in the United States or who are otherwise subject to the US Health Insurance Portability and Accountability Act ("HIPAA"), Customer warrants and represents that prior to providing Dell access to Equipment which has been used for processing and/or storage of Protected Health Information as defined in 45 C.F.R. Section 160.103 ("PHI"), all PHI on such Equipment has been rendered unusable, unreadable or indecipherable to unauthorized individuals through the use of a technology or methodology specified by the U.S. Secretary of Health ("Secretary") by either:

1. clearing, purging, or destroying PHI from any electronic media in a manner consistent with NIST Special Publication 800-88, Revision 1, Guidelines for Media Sanitization; or
 2. encrypting PHI as defined in 45 C.F.R. 164.304; or
- Customer shall be responsible for confirming any updated guidance from the Secretary on how to secure PHI in order to render it unusable, unreadable, or indecipherable, to unauthorized individuals and will comply with any applicable guidance as it relates to PHI found on equipment or materials submitted to Dell for processing.

J. Commercially Reasonable Limits to Scope of Service. Dell may refuse to provide Services if, in its opinion, the condition, size or location of the Equipment creates an unreasonable risk to Dell or Dell's Service providers or is beyond the scope of Services. Dell is not liable for any failure or delay in performance due to any cause beyond its control.

K. Optional Services. Optional services (including point-of-need support, installation, consulting, managed, professional, support or training services) may be available for purchase from Dell and will vary by Customer location. Optional services may require a separate agreement with Dell. In the absence of such agreement, optional services are provided pursuant to this Service Brief.

L. Cancellation. Dell may cancel this Service at any time prior to the Expiration Date for any of the following reasons:

- ☐ Customer fails to pay the total price for this Service in accordance with the invoice terms;
- ☐ Customer is abusive, threatening, or refuses to cooperate with the assisting analyst or on-site technician; or
- ☐ Customer fails to abide by all of the terms and conditions set forth in this Service Brief.

If Dell cancels this Service, Dell will send Customer written notice of cancellation at the address indicated on Customer's invoice. The notice will include the reason for cancellation and the effective date of cancellation, which will be not less than ten (10) days from the date Dell sends notice of cancellation to Customer, unless local law requires other cancellation provisions that may not be varied by agreement. If Dell cancels this Service pursuant to this paragraph, Customer shall not be entitled to any refund of fees paid or due to Dell.

M. Geographic Limitations and Relocation. These Services are not available at all locations. Service options, including service levels, technical support hours, and on-site response times will vary by geography and certain options may not be available for purchase in Customer's location, so please contact your sales representative for these details.

N. Limits of Data Sanitization. Dell makes no recommendations regarding the Customer's security needs or representations regarding the effectiveness of one method of data removal over another. It is the Customer's responsibility to protect any confidential or sensitive information contained on its drives recovered by Dell. For more information, please see the [Dell Media Sanitization Statement](#).

O. Service Hours. Subject to local law relating to weekly work hours, unless otherwise listed below, these Services will be performed Monday through Friday during normal Dell business hours, which is from 8:00 AM to 6:00 PM Customer local time ("Business Hours"):

Country	Normal Dell Business Hours
St. Kitts, St. Lucia, St. Vincent, Trinidad, Virgin Islands, Rest of English speaking Caribbean	Monday thru Friday from 7:00 AM to 4:00 PM
Barbados, Bahamas, Belize, Costa Rica, Denmark, El Salvador, Finland, Grand Cayman, Guatemala, Honduras, Jamaica, Norway, Panama, Puerto Rico, Rep. Dominicana, Suriname, Sweden, Turks and Caicos	Monday thru Friday from 8:00 AM to 5:00 PM
Australia, Bermuda, China, Haiti, Hong Kong, Japan, Netherland Antilles, New Zealand, Singapore, Thailand	Monday thru Friday from 9:00 AM to 5:00 PM
Argentina, Ecuador, France, India, Indonesia, Italy, Korea, Malaysia, Mexico, Paraguay, Peru, Taiwan, Uruguay	Monday thru Friday from 9:00 AM to 6:00 PM
Bolivia, Chile	Monday thru Friday from 9:00 AM to 7:00 PM
Middle East	Sunday thru Thursday from 8:00 AM to 6:00 PM

No Service activities will take place outside normal Business Hours or during local holidays unless other arrangements have been made in advance in writing.

The following table lists the applicable system/site limitations for sanitization on Equipment specified below:

Table 1.0

Product	Number of Systems/Site	Within 1 System	Max Drive count
Dell EMC Atmos	1	16 Nodes	960
Dell EMC Avamar	1	16 Nodes	384
Dell EMC Centera	1	16 Nodes	64
Dell EMC CLARiiON	1	All Drives	960
Dell EMC Celerra	1	All Drives	960
Dell EMC Data Domain	1	All Drives	1080
Dell EMC ECS	1	4 Appliances or 16 Nodes	960
Dell EMC DLm	1	All Drives	1080
Dell EMC Isilon, PowerScale	1	16 Nodes	1920
Dell EMC Symmetrix PowerMax VMAX3 AF	1	All Drives	PMAX = 288 VMAX 400K=5670
Dell EMC Unity	1	All Drives	1000
Dell EMC VNX	1	All Drives	1000
Dell EMC VxRail	1	4 Appliances or 16 Nodes	384
Dell EMC VxFlex	1	16 Nodes	384
Dell EMC VxBlock	1	Order Sum of the Parts. Example: 1 Server; 1 MR Storage, etc.	NA
Dell EMC XtremIO	1	4 Bricks	288
Dell EMC PowerOne	1	(1) MX7000 Compute Chassis and (1) Storage system (all drives)	288
Dell EMC IDPA	1	Up to 3 servers, 1 Data Domain system and 1 Avamar Cluster	Data Domain = 1080
Dell EMC PowerProtect X400	1	1 Core Cube, 4 Capacity Cubes	80
Dell PowerEdge Servers	1	16 Servers	384
Dell EqualLogic	1	16 Nodes	384
Dell PowerVault	1	7 drive bays max	336
Dell Compellent	1	16 Enclosure	500
Dell EMC PowerStore	1	All Drives	96
Network Switches	1	Network Switch (*)	N/A
Multivendor	1	Server, CI/HCI	384
	1	Data Protection, Mid-Range Storage, Unstructured Storage	500
	1	High End Storage	288

(*) Dell Sales representative can confirm the specific network switch models in scope for this offer

Dell's Responsibilities

1. Scheduling.

a. Dell will contact the Customer to schedule the Data Sanitization at each Site for a mutually agreeable time during Business Hours. Data Sanitization will generally be scheduled no earlier than ten (10) business days after the date of contact.

2. Data Sanitization

Dell shall:

- a. Arrive at the Site, contact the Customer's Site representative and proceed to the Data Sanitization Workspace;
- b. Record the following information on the Data Sanitization Summary for each System or switch: manufacturer, model number, properly seated and functional drive(s) serial number(s);
- c. Perform the Data Sanitization on each System or switch;
- d. For each System drive or switch on which Data Sanitization is attempted, designate on the Data Sanitization Summary whether the Data Sanitization was successful ("PASS") or unsuccessful ("FAILED");
- e. Remove any drive from a System for which the Data Sanitization was unsuccessful and return such drive to the Customer's Site representative; a tag will be attached to the switch or drive indicating date/time and reason for the failure (if known).
- f. If requested, provide the Customer with a PDF/CSV version of the Data Sanitization Summary on a flash drive (to be provided by the Customer) prior to leaving the Site;
- g. Provide a Data Sanitization Acknowledgement Form to the Customer's Site representative for their review and signature to certify that the Data Sanitization Summary provided in PDF/CSV (in step 2.1.f above) accurately reflects:
 - h. The Switches or System drives that were successfully sanitized ("PASS") and subsequently moved by Dell to a secured storage location designated by the Customer for future Pick Up; and/or
 - i. The Switches or System drives that were not successfully sanitized ("FAILED") and were subsequently returned to the Customer's Site representative for disposition by the Customer.

3. Reporting: Dell shall deliver to the Customer within thirty five (35) business days from the date of Pick Up the following reports via email:

- a. Disposition Report; and
- b. Confirmation of Disposal

Customer Responsibilities

1. General. THE CUSTOMER SHALL BACKUP ANY DATA OR SOFTWARE THE CUSTOMER DESIRES TO RETAIN PRIOR TO EQUIPMENT BEING MADE AVAILABLE TO DELL. Service provided under this Service Brief does not include the restoration of any data or software from Equipment.

2. Data Sanitization

The Customer shall:

- a. a. Remove/disable all passwords and other access security features and terminate any theft deterrent or laptop tracking software contained within such Equipment from Systems designated for Data Sanitization Services prior to Dell's arrival;
- b. The Data Sanitization Workspace shall at a minimum include:
 - i. Table/desk space, chairs, electrical outlets with adequate lighting;
 - ii. Space adequate to perform concurrent data sanitizations;
 - iii. Sufficient access to electrical power at voltage as applicable for the service and country in scope, and as advised by Dell upon scheduling
- c. Consolidate and locate all Systems designated for Data Sanitization Services in the same immediate area as the Data Sanitization Workspace;

- d. Provide a Site representative each day Data Sanitization is scheduled to be performed to direct Dell to the Data Sanitization Workspace and designate the Systems on which Dell should perform the Data Sanitization;
- e. Provide monitors and external power supplies for use with Systems during the Data Sanitization (monitors not required for portable computers);
- f. Provide a secured storage location in the same immediate area as the Data Sanitization Workspace for storage of Systems that were successfully Data Sanitized;
- g. Review the Data Sanitization Acknowledgement form and sign such form to certify the Customer's agreement that the Data Sanitization Summary provided in PDF/CSV (as defined under Dell's Responsibilities, Section 2.1.f. above) accurately reflects: (i) the System drives that were successfully sanitized ("PASS") (ii) the System drives that were not successfully sanitized ("FAILED") and were subsequently returned to the Customer's Site representative for disposition by the Customer;

4. Customer Warranty. The Customer represents and warrants as follows:

- a. The Customer has good title to the data bearing devices free and clear of all liens, claims and encumbrances of any kind;
- b. The Customer has removed all confidential, proprietary, sensitive or other non-public data from all data bearing devices
- c. The Customer is responsible for and has complied with the health and safety requirements and obligations applicable to it in relation to the Site(s) to which Dell or its providers are given access by the Customer, including the Data Sanitization Workspace
- d. If the Customer breaches any of its obligations or warranties outlined in this Service Brief, Dell shall not be obligated to provide the Services or liable for any damages resulting from the Customer's breach. Alternatively, the Customer may incur additional fees and expenses for any resulting additional time or materials, loss or damage incurred by Dell or its providers.

C. Pricing and Payment Terms

The Customer will be charged on a per Piece basis. Refer to Table 1 for per piece limitations.

Pick Up and/or recycling of the Customer's packaging/boxes are not included in the cost of this Service and will incur additional fees.

The Customer hereby agrees to pay the price for each Piece per the applicable Dell order confirmation, as well as any additional fees and costs set forth in this Service Brief. The Customer acknowledges and agrees that Dell shall be entitled to set off amounts due to Dell under this Service Brief against the amounts otherwise payable by Dell to the Customer hereunder.

Additional Fees.

- ☐ Services rendered by Dell for Pieces in excess of the amount ordered will be billed at the per Piece price for the associated Service.
- ☐ Locations in offshore territories, islands and other remote or indirect locations will incur additional fees.
- ☐ Sites requiring access or vehicle restrictions, union labor, time specific or after normal Business Hours will incur additional charges.
- ☐ Sites requiring access or vehicle restrictions, union labor, time specific or after normal Business Hours will incur additional charges.
- ☐ If the Customer, the Site and/or the Equipment, does not conform to the requirements set forth in this

Service Brief, or the Customer is somehow otherwise not ready for the Data Sanitization to be undertaken as scheduled, the applicable Services may need to be rescheduled and/or additional fees will apply.

D. Important Additional Terms

Title and Risk of Loss. Dell or Dell's Logistics Provider will bear the risk of loss or damage to the Equipment after departure from the Pickup Site. Title will be deemed to pass to Dell or Dell's Logistics Provider upon receipt and possession of the Equipment by Dell or Dell's Logistics Provider.

Warranty and Liability. As it relates specifically to the Services provided under this Service Brief only, and despite any conflicting terms in the Agreement, the following terms and conditions apply:

1. **Warranty.** DELL WARRANTS THAT IT WILL PERFORM THE SERVICE WITH COMMERCIALY REASONABLE CARE. DELL MAKES NO OTHER WARRANTY AND DISCLAIMS ALL OTHER WARRANTIES AND CONDITIONS, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

2. **Limitation of Liability.** DELL'S AND ITS SERVICE PROVIDERS' LIABILITY FOR SERVICES PROVIDED IN ACCORDANCE WITH THIS SERVICE BRIEF, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH LIABILITY, WILL BE AT ALL TIMES SUBJECT TO THE FOLLOWING LIMITATIONS AND EXCLUSIONS:

a. IN NO EVENT SHALL DELL BE LIABLE (WHETHER IN CONTRACT, TORT OR OTHERWISE) FOR ANY OF THE FOLLOWING: (I) LOST PROFITS, LOSS OR CORRUPTION OF DATA OR SOFTWARE, LOSS OF BUSINESS OR COMPLIANCE WITH THIRD PARTY REQUIREMENTS THAT MAY APPLY TO DATA ON EQUIPMENT, (II) CONSEQUENTIAL, SPECIAL, INDIRECT, INCIDENTAL OR PUNITIVE (IF APPLICABLE) DAMAGES, OR (III) ANY THIRD PARTY CLAIM.

b. DELL SHALL HAVE NO LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) FOR THE SECURITY OR CONFIDENTIALITY OF DATA RESIDING ON EQUIPMENT EXCEPT FOR THE UNAUTHORIZED DISCLOSURE OF DATA FROM A SYSTEM DRIVE WHICH DELL AND/OR ITS SERVICE PROVIDERS' FAILED TO PROPERLY PERFORM THE DATA SANITIZATION AT CUSTOMER'S SITE IN ACCORDANCE WITH THE PROCESSES SET FORTH HEREIN AND SUBSEQUENTLY CERTIFIED SUCH DRIVE AS BEING SUCCESSFULLY SANITIZED ON THE DATA SANITIZATION SUMMARY. IN SUCH CASE DELL SHALL BE LIABLE TO CUSTOMER FOR DIRECT DAMAGES RESULTING FROM SUCH DISCLOSURE UP TO THE LIABILITY CAP SET FORTH IN SECTION D.2.d BELOW.

c. DELL'S MAXIMUM AND SOLE LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR IN CONNECTION WITH ANY CLAIM FOR LOSS OF ANY PHYSICAL ITEM OF EQUIPMENT SHALL IN NO EVENT EXCEED THE VALUATION THEREOF SET OUT IN THE UEPP FOR THE MONTH IN WHICH THE ITEM WAS FIRST DISCOVERED AS LOST.

d. DELL'S AGGREGATE LIABILITY (WHETHER IN CONTRACT, TORT OR OTHERWISE) FOR ANY AND ALL CLAIMS OF LIABILITY ARISING OUT OF, OR IN CONNECTION WITH THIS SERVICE BRIEF WITHIN ANY CALENDAR YEAR SHALL NOT EXCEED THE TOTAL AMOUNT OF FEES PAID OR PAYABLE BY CUSTOMER UNDER THIS SERVICE BRIEF IN SUCH CALENDAR YEAR.

DELL DOES NOT LIMIT ITS LIABILITY FOR FRAUD, PERSONAL INJURY OR DEATH ARISING FROM ITS NEGLIGENCE OR ANY OTHER LOSS THAT CANNOT BE LIMITED UNDER APPLICABLE LAW. IN THE EVENT APPLICABLE LAW PROHIBITS IN ANY PART ANY LIMITATION OF LIABILITY IN THIS SERVICE BRIEF, THE PARTIES AGREE THAT SUCH LIMITATION SHALL BE MODIFIED, WITHOUT FURTHER ACTION OF EITHER PARTY, SO AS TO BROADLY APPLY TO THE MAXIMUM EFFECT ALLOWED BY APPLICABLE LAW.



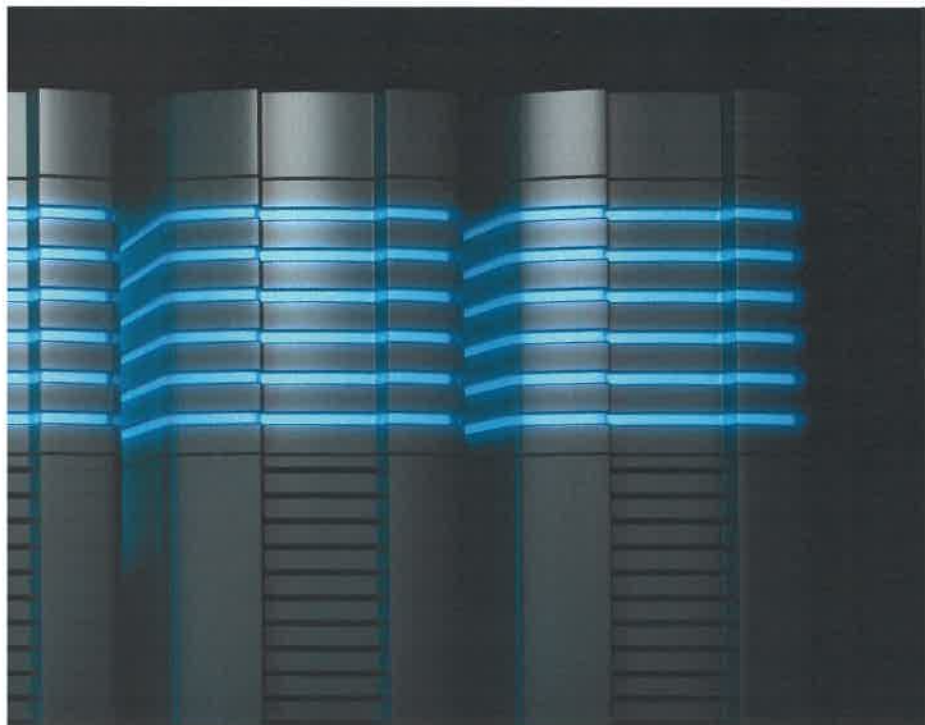
APPENDIX I – DELL OEM INSTALLATION SERVICES



ProDeploy Enterprise Suite

Dell Technologies

Accelerate technology adoption with
deployment designed for you



Faster, better deployment with less IT effort.

It's never been easier maximizing
new technology on day one.

Your team is ready for the next step in IT
modernization and excited about the promise
of new technology. But maximizing the
hardware on day one has you concerned about
delays and not realizing the full potential of
the new hardware.

Dell Technologies experts are here to help
with 24/7 deployment services that take you
from planning through implementation to
production ready.

The Stats

Dell Technologies Services does what we do best, while you focus on your business.

At Dell Technologies, we have invested over 30 years building best-in-class deployment practices and tools, backed by elite professionals with broad and deep knowledge. Our established global scale drives consistent deployments to help you drive greater business results, around the clock and around the globe.

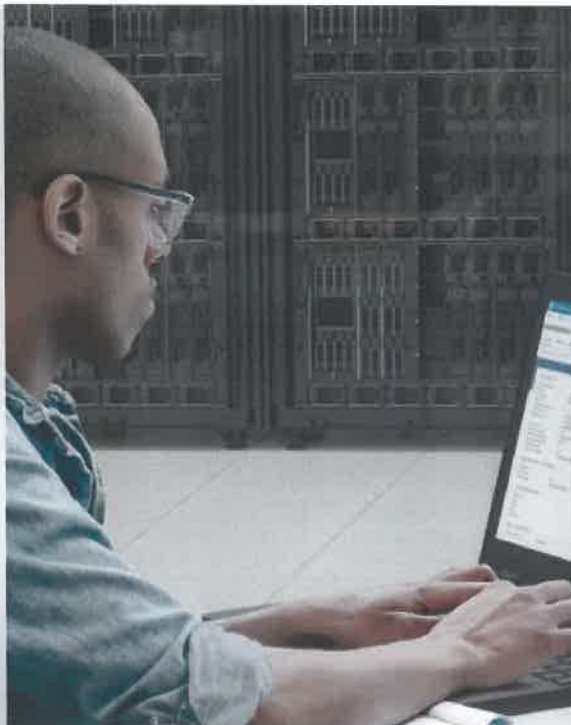
→ Best in class processes based on 30+ years of experience



Stay connected

Follow your deployment and more
in TechDirect.

Collaborate with our experts online to plan, track and
deliver your deployment projects from an end-to-end
management portal in TechDirect. Once your Dell EMC
hardware is in production, start using our services
technology for an adaptive, automated digital
experience that lets you optimize the systems
powering your datacenter – through asset retirement.



Three great choices for technology deployments

The ProDeploy Suite is designed to
complement your business model –
whether you have an experienced IT
staff or no staff at all.

We understand the demands on you
and your team, and are here to provide
the right assistance to keep up with
your evolving technology needs.

		Basic Deployment	ProDeploy	ProDeploy Plus
Pre- deployment	Single point of contact for project management	–	•	In-region
	Site readiness review	–	•	•
	Implementation planning ¹	–	•	•
	SAM engagement for ProSupport Plus entitled devices	–	–	•
Deployment	Deployment service hours	Business Hours	24x7	24x7
	Remote guidance for hardware installation or onsite hardware installation and packaging material removal ²	Onsite	Remote/Onsite	Onsite
	Install and configure system software	–	Remote	Onsite
	Install support software and connect with Dell Technologies	–	•	•
	Project documentation with knowledge transfer	–	•	•
Post- Deployment	Deployment verification	–	•	•
	Configuration data transfer to Dell EMC technical support	–	•	•
	30-day of post-deployment configuration assistance	–	–	•
	Training credits for Dell EMC Education Services	–	–	•
Team Dashboard	Online collaborative environment in TechDirect for planning, managing and tracking delivery ³	–	•	•

¹ Remote option includes project specific instructions, documentation and live expert guidance for hardware
installation. Ask your Dell Technologies representative for details.

² Packaging removal included with onsite hardware installation.

³ Included with ProDeploy or ProDeploy Plus, Not included with Basic Deployment.

ProDeploy Plus

The market's most complete deployment offer

Our deep expertise in project management, focus on rapid integration and commitment to education help you make IT transformation real. From beginning to end, ProDeploy Plus provides the skill and scale needed to successfully execute demanding deployments in today's complex IT environments.

We start with a site readiness review, planning and recommendations. A single point of contact for localized project management and a more personalized experience through a Services Account Manager (SAM) for entitled devices, will elevate your deployment experience. Post-deployment configuration assistance, testing, and product orientation help you rest easy, knowing your systems have been deployed and integrated right. Flexible training credits empower your staff to build the right skills to fully utilize your new technology.

With ProDeploy Plus, you get everything in ProDeploy and more

- In-region, single point of contact for project management
- 24x7 installation and standard onsite system software configuration
- 30-days of post-deployment configuration assistance
- Training credits for Dell Technologies Education Services



We saved 15 to 17 days of work deploying our servers and storage thanks to ProDeploy Plus.

Nagesh Joi
Director of Information Systems
Tavant Technologies
Jan 2019

ProDeploy

Maximize your new technology starting on day one

Customer expectations are high and workforce needs are shifting rapidly, placing pressure on your team to deploy technology fast. But how can you deliver infrastructure that best leverages your resources and maximizes the value of new technology? Get ProDeploy and take advantage of our project planning, onsite hardware installation and remote software installation to get the most of your new technology starting on day one.

Rapidly adopt new technology and set your organization up for success with expert planning and implementation. ProDeploy provides full-service installation and configuration of both hardware and system software by certified deployment engineers. To prepare for the deployment, we conduct a site readiness review and implementation planning. System testing, validation and full project documentation with knowledge transfer complete the process. We focus on getting you up and running so you can focus on your business and prepare for whatever comes next.

With ProDeploy, you get:

- Single point of contact for project management
- Implementation planning
- 24x7 onsite hardware installation or live remote installation guidance*
- 24x7 install and configure system software
- Project documentation and knowledge transfer

* Restrictions apply with remote guidance. Speak with your Dell representative for more information.



With the help of ProDeploy, the install process went smoothly.

Mitsuo Nakamura
Account SE Group, Industry Business
Unit, Solution Sales Division
Chubu Telecommunications
Jan 2018

Basic Deployment

Get consistent hardware installation by experienced technicians

Trust Dell EMC to install your hardware quickly and right the first time, while freeing up your staff's time. Basic Deployment delivers worry-free professional installation of server, storage data protection and networking systems by experienced technicians who know Dell EMC products inside and out. Not only will you save time, you'll reduce the need for maintenance and simplify future projects when you let Dell EMC or our partner's deployment experts do the heavy lifting - whether you have one site or multiple locations.

With Basic Deployment, you get:

- Onsite hardware installation during business hours
- Packaging material disposal at on-site refuse and recycle locations



We saved
months of time
by having Dell
Services stand
it up for us.

Bruce Salisbury
IT Director
Capital Area Human Services
Mar 2018



Beyond ProDeploy

In addition to the ProDeploy Suite, we provide additional services to accelerate adoption in the enterprise.

- Additional Deployment Time
- Production Ready for Data Protection
- Data Migration Services
- Residency Services
- Training and Certification
- Other Delivery Services

Additional Deployment Time

ProDeploy Plus, ProDeploy or Basic Deployment are designed to fit most new technology installations. When the deployment need is greater in length, complexity or scope, choose Additional Deployment Time to reach success with blocks of remote or onsite assistance. Additional Deployment Time can extend the ProDeploy Suite or be used separately to get new technology ready for day one.



Features:

- Easily extend the ProDeploy Suite
- Get specialized help from certified experts
- Choose from remote or on-site deployment assistance

Residency Services

New technology creates competitive advantage for businesses, but solutions must be introduced in a way that suits your unique requirements.

Residency Services can help set you up for future success and growth.
Drive transformation initiatives and integration at scale
Deliver accelerated adoption of new technology
Expertly pair solutions to the unique business environment
Keep IT infrastructure running at its peak

Unmatched Expertise
Specialized experts with validated expertise across Dell EMC infrastructure products, as well as platforms and solutions in support of IT and application transformation and workforce productivity goals.

Individualized Service
Residents are directed by your priorities and time, with an extensive resource selection process to match the right resource to your individual needs.
Backed by an extensive global network with utmost resource flexibility, Residency can be delivered in-person or virtually in over 100 countries, with short term options starting at 1 week for certain engagements.



Elevated Technology with Measurable Results.

Residents help throughout multiple phases of the IT adoption cycle, from implementation and integration to operation and optimization, delivering measurable results as seen in a recent IDC study:

- 50% improvement in technology performance
- 47% increase in technology utilization
- 40% reduction in cost of IT service delivery
- 45% improvement in IT staff efficiency
- 23 fewer incidents per month
- 9 weeks saved during technology transitions

Data Migration Services

Data is one of your organization's most important resources and you need that data to fuel business growth.

But distributed data can keep valuable insights out of reach. Our experts help efficiently move data from where it is, to where it will drive innovation. We migrate data every day, all over the world, in any situation you can imagine. Whether you are upgrading technology, changing platforms or leveraging cloud, our experts use proven tools to streamline migrations and provide you a faster time to value.

Our Data Migration Services provide greater control, security and value through standardized processes in planning, execution and knowledge transfer. We lower risk through expert-delivered, dependable best practices developed over 30 years of data migration success. Our goal is to improve data availability and migrate your data efficiently with greater data integrity. Let Dell Technologies help accelerate migrations at every level of your transformation.



Features:


- 24/7 hours of operation
- Remote project management
- Remote technical resources
- Unified delivery program management
- Proven, robust selection of tools
- Remote monitoring and status reporting
- Flexible options for services

Production Ready for Data Protection

Businesses face constantly evolving challenges regarding data.

While data can create opportunity and advantage, it also brings complexity and risk. Introducing a new Data Protection solution requires complex configuration to meet essential requirements.

Our experts can elevate your technology investment and drive you into production faster, ensuring critical Data Protection solutions are matched to your unique environment to deliver the best experience for your business. Dell Technologies Services' complete portfolio delivers accelerated time to production.




Features:

- Protect data per industry regulations
- Prevent loss on critical data loss
- Integrate with Disaster Recovery
- Centralize data backup
- Cost-effective large scale data retention

Training and Certification

Gain proficiency in the skills today's IT professionals need

Through Dell Technologies Education Services training and Proven Professional certifications, IT professionals and partners can achieve the practical knowledge needed for today's ever-changing IT environment. We provide the skills needed to get the most out of investments, reduce downtime and keep infrastructures running smoothly. From design to installation, configuration and management, certified Proven Professionals are better equipped to implement and optimize new technologies.



Dell Technologies Certified Proven Professionals get:

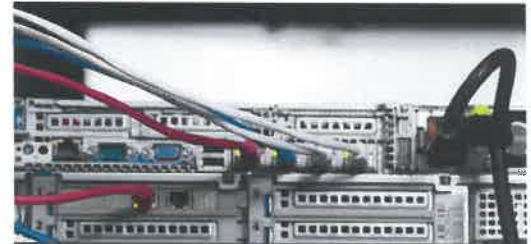
- Globally-recognized certifications in design, deployment and administration
- Validation of skills through exams and digital badging
- Increased responsibilities, opportunities and peer respect

Other Delivery Services

PowerEdge Configuration Services

It's time to refresh with the latest technology, but when you're deploying a large quantity of servers in a short amount of time, resources can get stretched thin, and let's face it, consistency can suffer. PowerEdge Configuration Services can help you deploy new servers quickly and efficiently.

We configure them for you, before shipping and right the first time. From system settings for PowerEdge, to services like custom asset tagging, reporting, customer supplied system image, and card placement - we deliver your new PowerEdge servers with expert care, precision, to your specifications, ready to deploy.



Features:

- Save time and money when you receive PowerEdge servers ready to deploy
- Scalable, repeatable, global with consistent results
- Easily choose the service combination to fit your needs time after time

Experience the Dell EMC Difference

Built on the principle of putting customers first, Dell EMC is uniquely positioned to provide consistent services from edge to core to cloud. Dell EMC Services are designed to transform your investments and enable you to be an agent of change for your organization.

Whether you're adding new technology, consolidating existing systems or building a data center from the ground up, you can count on Dell EMC for an efficient-deployment culture beginning at the factory. Make sure even the most complex project is effectively planned, configured, integrated and tested right from the start and supported for the future. We'll look after your deployment projects, so you can look after your business and drive rapid adoption of your digital technologies.

¹ Based on a September 2020 Principled Technologies Test Report commissioned by Dell Technologies comparing in-house deployment vs. Dell EMC ProDeploy for Enterprise deployment service for Dell EMC PowerEdge R740 servers, Dell EMC Unity Storage array and Dell EMC PowerSwitch S4048-ON. Actual results will vary. Full report: <http://facts.pt/JPIIWM>

² Based on an October internal analysis of support. Guided hardware installation is not available for all technologies; contact your Dell Technologies expert for guidance.

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Go to DellTechnologies.com/prodeploy for more information or contact your Dell Technologies advisor.

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