ViON®
Building your enterprise solutions

State of West Virginia

Data Center 2.0 RFP
Solicitation Number OOT2000000001

Technical Proposal

April 10, 2020

Submitted To:

Data Center 2.0 RFP
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130
Jessica S. Chambers
Email: Jessica.s.chambers@wv.gov

Submitted By:

ViON Corporation
Bridget Bradshaw, Account Executive
196 Van Buren Street
Herndon, VA 20170
Telephone: (571) 353-6000
Fax: (703) 707 0987
Email: Bridget.Bradshaw@vion.com

TITLE PAGE

ITEM	VION RESPONSE
RFP Subject:	Data Center 2.0 RFP
RFP Number:	OOT2000000001
Vendor Name:	ViON Corporation
Business Address:	196 Van Buren Street Herndon, VA 20170
Telephone Number:	(571) 353-6000
Fax Number:	(703) 707 0987
Name of Contact Person:	Bridget Bradshaw
Email Address	Bridget.Bradshaw@vion.com

Date: 4/10/2020

Signature:

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DESIGNATED CONTACT FORM

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

Dawn Fabean, Director of Contract
(Name, Title)

(Printed Name and Title)
196 Van Buren Street, Herndon, VA. 20170
(Address)
(571) 353 6000 / (703) 707 0987
(Phone Number) / (Fax Number)
Dawn.Fabean@vion.com
(email address)

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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated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

ViON Corporation
(Company)

(Authorized Signature) (Representative Name, Title)

John Pyne, Vice President of Cloud PMO
(Printed Name and Title of Authorized Representative)

04/10/2020
(Date)

(571) 353 6000 / (703) 707 0987
(Phone Number) (Fax Number)

Revised 11/14/2019

EVALUATION AND AWARD FORM

REQUEST FOR PROPOSAL
WV Office of Technology
On-Premise Infrastructure

SECTION 6: EVALUATION AND AWARD

6.1. Evaluation Process: Proposals will be evaluated in two parts by a committee of three (3) or more individuals. The first evaluation will be of the technical proposal and the second is an evaluation of the cost proposal. The Vendor who demonstrates that it meets all of the mandatory specifications required, attains the minimum acceptable score and attains the highest overall point score of all Vendor's shall be awarded the contract.

6.2. Evaluation Criteria: Proposals will be evaluated based on criteria set forth in the solicitation and information contained in the proposals submitted in response to the solicitation. The technical evaluation will be based upon the point allocations designated below for a total of 70 of the 100 points. Cost represents 30 of the 100 total points.

Evaluation Point Allocation:

Project Goals and Proposed Approach (§ 4.2)	
- Approach & Methodology to Goals/Objectives (§ 4.2.1)	(25) Points Possible
- Approach & Methodology to Compliance with Mandatory Project Requirements (§ 4.2.2)	(15) Points Possible
Qualifications and experience (§ 4.3)	
- Qualifications and Experience Generally (§ 4.3.1)	(15) Points Possible
- Exceeding Mandatory Qualification/Experience Requirements (§ 4.3.2)	(10) Points Possible
Oral interview (§ 4.4)	(5) Points Possible
Total Technical Score:	70 Points Possible
Total Cost Score:	30 Points Possible
Total Proposal Score:	100 Points Possible

6.3. Technical Bid Opening: At the technical bid opening, the Purchasing Division will open and announce the technical proposals received prior to the bid opening deadline. Once opened, the technical proposals will be provided to the Agency evaluation committee for technical evaluation.

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REQUEST FOR PROPOSAL

WV Office of Technology

On-Premise Infrastructure

6.4. Technical Evaluation: The Agency evaluation committee will review the technical proposals, assign points where appropriate, and make a final written recommendation to the Purchasing Division.

6.5. Proposal Disqualification: The proposal will be disqualified if the following standards are not met.

6.5.1. Minimum Acceptable Score ("MAS"): Vendor's must score a minimum of 70% (49 points) of the total technical points possible in order to move past the technical evaluation and have their cost proposal evaluated. All vendor proposals not attaining the MAS will be disqualified.

6.5.2. Failure to Meet Mandatory Requirement: Vendor's must meet or exceed all mandatory requirements in order to move past the technical evaluation and have their cost proposals evaluated. Proposals failing to meet one or more mandatory requirements of the RFP will be disqualified.

6.6. Cost Bid Opening: The Purchasing Division will schedule a date and time to publicly open and announce cost proposals after technical evaluation has been completed and the Purchasing Division has approved the technical recommendation of the evaluation committee. All cost bids received will be opened. Cost bids for disqualified proposals will be opened for record keeping purposes only and will not be evaluated or considered. Once opened, the cost proposals will be provided to the Agency evaluation committee for cost evaluation.

The Purchasing Division reserves the right to disqualify a proposal based upon deficiencies in the technical proposal even after the cost evaluation.

6.7. Cost Evaluation: The Agency evaluation committee will review the cost proposals, assign points in accordance with the cost evaluation formula contained herein and make a final recommendation to the Purchasing Division.

Cost Evaluation Formula: Each cost proposal will have points assigned using the following formula for all Vendor's not disqualified during the technical evaluation. The lowest cost of all proposals is divided by the cost of the proposal being evaluated to generate a cost score percentage. That percentage is then multiplied by the points attributable to the cost proposal to determine the number of points allocated to the cost proposal being evaluated.

Step 1: Lowest Cost of All Proposals / Cost of Proposal Being Evaluated = Cost Score Percentage

Step 2: Cost Score Percentage X Points Allocated to Cost Proposal = **Total Cost Score**

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REQUEST FOR PROPOSAL

WV Office of Technology

On-Premise Infrastructure

Example:

Proposal 1 Cost is $1,000,000
Proposal 2 Cost is $1,100,000
Points Allocated to Cost Proposal is 30

Proposal 1: Step 1 – $1,000,000 / $1,000,000 = Cost Score Percentage of 1 (100%)
Step 2 – 1 X 30 = Total Cost Score of 30

Proposal 2: Step 1– $1,000,000 / $1,100,000 = Cost Score Percentage of 0.909091 (90.9091%)
Step 2 – 0.909091 X 30 = Total Cost Score of 27.27273

6.8. Availability of Information: Proposal submissions become public and are available for review immediately after opening pursuant to West Virginia Code §5A-3-11(h). All other information associated with the RFP, including but not limited to, technical scores and reasons for disqualification, will not be available until after the contract has been awarded pursuant to West Virginia Code of State Rules §148-1-6.3.d.

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.

ViON Corporation
(Company)

John Pyne, VP of Cloud PMO
(Representative Name, Title)

(571) 353 6000 / (703) 707 0987
(Contact Phone/Fax Number)

04/10/2020
(Date)

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ADDENDUM ACKNOWLEDGEMENT FORM

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

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

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

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

[✓] Addendum No. 1	[✓] Addendum No. 6
[✓] Addendum No. 2	[✓] Addendum No. 7
[✓] Addendum No. 3	[✓] Addendum No. 8
[✓] Addendum No. 4	[✓] Addendum No. 9
[✓] Addendum No. 5	[✓] Addendum No. 10

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

ViON Corporation
Company

Authorized Signature

04/10/2020
Date

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

PURCHASING AFFIDAVIT FORM

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 exceed five percent of the total contract amount.

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

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: ViON Corporation

Authorized Signature: _____ Date: 04/10/2020

State of Virginia

County of Fairfax, to-wit:

Taken, subscribed, and sworn to before me this 10 day of March, 2020

My Commission expires October 31, 2020

AFFIX SEAL HERE

NOTARY PUBLIC _____

NAOMI MARLEEN RADIGAN
NOTARY PUBLIC
COMMONWEALTH OF VIRGINIA
MY COMMISSION NUMBER 7315446

Purchasing Affidavit (Revised 01/19/2018)

DISCLOSURE FORM

West Virginia Ethics Commission
Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: ViON Corporation **Address:** 196 Van Buren Street, Herndon, VA 20170

Name of Authorized Agent: John Pyne **Address:** 196 Van Buren Street, Herndon, VA 20170

Contract Number: OOT2000000001 **Contract Description:** Data Center 2.0

Governmental agency awarding contract: West Virginia Office of Technology

☑ **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.
   Dell Technologies / ScienceLogic
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.
   Tom Frana, Micheal Jones
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: 04/10/2020

Notary Verification

State of Virginia, County of Fairfax:

I, John Pyne, 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 24th day of March, 2020

Notary Public's Signature

To be completed by State Agency
Date Received by State Agency: _____
Date submitted to Ethics Commission: _____
Governmental agency submitting Disclosure: _____

Revised June 8, 2018

EXECUTIVE SUMMARY

West Virginia's Office of Technology (WVOT) has a demanding mission set with critical technology goals around digital government, optimization and value, and enterprise services. Combined with rapid technological change and projected 5-7% year-over-year capacity and services growth, it is vital WVOT procure not only the best technology and services available, but do so in a model that will ensure full success of the Data Center 2.0 strategic initiative. WVOT's selection of a cloud-based model for Infrastructure-as-a-Service (IaaS) is a highly effective strategy to accomplish their overall strategic vision while offering the ability to flex up and down as times require.

ViON's as a Service Model:

- ✓ Is designed to Support Surges
- ✓ Scales Back when needs allow
- ✓ Supports all Infrastructure Types

As the ongoing Coronavirus public health crisis illustrates, Information Technology (IT) infrastructure that is fully fit for purpose and is efficient, scalable, cost-effective, and dependable is critical for any state government to operate optimally. This is true not only of the particularly challenging issues currently presented nationwide by the Coronavirus pandemic, but across the gamut of responsibilities state IT systems must be capable of handling on a day to day basis. Supporting such a complex set of objectives requires a contracting partner with proven past performance, expertise in this area, and a demonstrated ability to add or reduce capacity or features as WVOT requires.

A pioneer in technology as-a-Service (aaS) contracts, ViON is a veteran-owned and privately held company that has supported numerous State, US Federal, Commercial, and Higher Education organizations with enterprise IT design, supply, and implementation since 1980. With deliberate and consistent market analysis along with carefully researched Original Equipment Manufacturer (OEM) offerings and solutions, ViON has extensive experience seamlessly transitioning customers from one generation of technology to the next.

Today, ViON is a leading Cloud Service Provider (CSP) providing on-premise, aaS capabilities and public cloud enablement, and brings the two together to deliver singularly managed hybrid cloud programs for our customers. With more than 50 IaaS programs delivered across State and Local Governments and US Federal Departments, Bureaus, and Agencies both on and off premise, ViON has significant operational expertise supporting a varied set of business and mission requirements. Our aaS model has been consistently delivering to and evolving with the US Federal Government for 17 years.

Vendor independent, ViON has an extensive network of OEM relationships with comprehensive market capabilities that WVOT will be able to leverage over the life of this program. We work with industry partners to develop and provide solutions and equipment tailored to our customers' specific needs rather than WVOT restricted to specific OEMs.

Our 'Deep Customer Understanding' philosophy and approach are central to what we do as a business and revolve around listening to our customers and partnering with them to develop and deliver what truly fits their needs.

We do this is through our highly developed and successful aaS model. This model enables organizations to dynamically order and use IT infrastructure – server, storage, networking, software, and services – as needed, scaling usage up or down, without penalty, to align with

business requirements. ViON aaS offering permits a high-level of customization and can scale rapidly to suit any specific environment now or in the future.

Extremely flexible, ViON's aaS model will ultimately be controlled by WVOT (with ViON doing all the necessary work on the back end for this to happen) – allowing for budget optimization. This model (which has been funded with both operational and capex budget line items with our Federal customers) underpins our 17 years of aaS delivery. ViON aaS helps organizations such as WVOT simplify the management of IT by providing a business strategy successes for:

- Acquiring, modernizing, and provisioning IT assets without large upfront CapEx investments
- Expanding/ scaling access to new hardware/software technologies by leveraging operational vs. capital funding with predictable and manageable budgets
- Continuously accessing top-tier engineering expertise to accommodate emerging/ unknown future requirements
- Extending support with managed services levels and strict Service Level Agreements (SLAs) to protect our customers and their data
- Eliminating expensive out-year maintenance or equipment replacement bills as this is already included in aaS pricing

ViON's aaS model is very flexible and works side-by-side with traditional acquisition models. Technology deployed by ViON in our aaS models can be connected to infrastructure that the customer purchased and can be seamlessly managed. Our program can be easily operated with technology that the customer leased, if those requirements exist (although there is no leasing in ViON's model). We deliver virtually every type of IT infrastructure – compute, storage, and network – along with software and services, via our aaS model.

MOST AAS EXPERIENCE IN GOVERNMENT:

- ✓ Over 20 "Current" aaS Government Customers
- ✓ Ceiling Value over $950M
- ✓ In-house Dedicated 24x7x365 Support Center

Our past performance includes serving customers who acquire all major types of infrastructure, as well as those that only acquire storage, network, or compute. ViON has the largest portfolio of aaS technology in the industry, with 44 different OEM partners and their solutions available to our customers. Having this breadth and depth avoids vendor lock-in for WVOT. ViON continuously updates our technology portfolio and we will initiate new business relationships and/or bring on board new offerings where this is needed to more fully meet customer needs.

Our 24x7x365, US-based, Support Centers are staffed by certified and cleared engineers who average more than 20 years of industry experience. This experience level accelerates and streamlines support to our customers. Most importantly, our 17 years of aaS experience has created an expertise in delivering technology aaS that uniquely positions us to execute and deliver at a level that other companies struggle to achieve.

That is why over 20 Federal and State agencies currently trust ViON with their aaS initiatives, totaling over $950M in aaS contract value.

As detailed below, our aaS solution will enable WVOT to establish a centralized Data Center-as-a-Service (DCaaS) model for on-premise technology infrastructure that will enable the achievement of WVOT's goals, to include:

- ✓ Leveraging a co-location model to ensure all State data center locations meet and adhere to all relevant cybersecurity, privacy, redundancy, and resiliency levels
- ✓ Enabling contract consolidation and cost-efficiencies by facilitating the virtualization of existing structure and data center consolidation
- ✓ Enabling a risk/compliance-based model that enhances and strengthens existing State infrastructure cybersecurity and privacy
- ✓ Employing our expertise and past experience to assist in maintaining and managing multiple on-premise infrastructure component – to include legacy and unsupported systems – reducing WVOT cyber risk and overhead costs
- ✓ Facilitating the optimal Return on Investment for cloud-suitable workloads by implementing the design and implementation measure that fully capitalize the leveraging of available and emerging cloud resources
- ✓ Preparing the WVOT IT infrastructure environment for a move to a hybrid data center approach

Alongside a comprehensive catalog of infrastructure technology and services, we have ensured that all applicable WVOT requirements and operation will be transitioned with minimal risk and disruption. ViON will also continue to leverage partner relationships and seek methods to reduce costs at project/opportunity-specific levels across our catalog offerings. These efficiencies will pass to WVOT as we partner with them to fully achieve their existing and future IT goals.

TEAM/PARTNERSHIPS

ViON proposes state-of-the-art storage solutions to support WVOT's digital transformation. The focus is to enable WVOT to address the demanding needs of the state's agencies with the industry's most innovative and cost-effective technology in a consumable model. Accessing our broad storage portfolio, we have selected the optimal offerings available today to address WVOT's unique requirements and have found Dell Technologies' portfolio provides the best-suited technology to meet or exceed WVOT's current and future needs.

VION'S 40+ OEM PARTNERS:

- ✓ No Vendor lock-in for WVOT
- ✓ Best Solutions for your needs
- ✓ Not Forced to make a specific brand work

ViON has historically partnered with Dell Technologies when it is appropriate to meet our customer's specific requirements to deliver consumable infrastructure to Federal, State, and Commercial entities. Indeed, 60% of ViON's $950million aaS business includes Dell Technologies products. They are a significant partner whose offerings we incorporate with other OEM solutions to provide our customers with the best fit for their individual requirements.

Dell Technologies' acquisition of EMC Corporation in 2016 created a $74 billion market leader with an expansive technology portfolio aimed at hybrid cloud, software-defined data center,

converged infrastructure, data analytics, mobility, and cybersecurity. ViON leverages that portfolio extensively and supplements with other vendor offerings where additional value can be realized. Our relationship with Dell Technologies extends further than the reselling of its equipment. We have in-depth knowledge of their product roadmaps through our Non-Disclosure Agreement covered relationship, as well as engineers who are trained and certified in Dell Technologies products.

ViON's unprecedented aaS knowledge combined with an infrastructure market leader, allows us to deliver advanced technology to agencies in a simplified and flexible provisioning model.

TECHNICAL RESPONSE

PROJECT GOALS AND MANDATORY REQUIREMENTS (RFP 4.2)

The purpose of this RFP is to establish a contract for on-premise data center infrastructure capable of scalability, flexibility, and elasticity. The RFP defines the service expectations and services scope. Vendor's are highly encouraged to review the entire RFP to ensure proper scoping in their proposal. Vendor should provide its approach and methodology to providing the solution or solving the problem described by meeting the goals/objectives identified below. Vendor's response should include any information about how the proposed approach is superior or inferior to other possible approaches, outline project deliverables, and provide supporting documentation.

NOTE: If, as part of its proposal, the Vendor submits appendices or other supplemental materials, the Vendor should denote specifically in those materials where the relevant information is located.

ViON describes our approach and methodology to providing the solution and solving the business challenges laid out in this RFP via our responses to individual project goals and mandatory requirements that follow. We describe in detail both why and how we selected the specific solution to WVOT's goals and mandatory requirements, as well as how our proposed solution is superior to other possible approaches.

ViON proposes the Dell EMC VxBlock 1000 and Dell EMC IDPA to optimally meet WVOT's core goals and objectives for DC 2.0. Implementing a VxBlock 1000 such as we propose will help WVOT transform its IT organization to gain better control of costs, reduce complexities, and modernize infrastructure to allow for further IT transformation across the State.

4.2.1 Goals and Objectives

The primary goal of this solicitation is to establish on-premise infrastructure contract to enable WVOT to provide virtualized x86 computer and storage resources to executive branch agencies who fall under the purview of the West Virginia Office of Technology (WVOT). The solution should be designed with the capability to expand and shrink the physical infrastructure and associated operational expense, under a scalable infrastructure architecture. There are four (4) components to this RFP; On-Premise Infrastructure, Enterprise Data Backup, Infrastructure Operations Monitoring and On-Demand Professional Services. The overarching goals for each component are outlined below.

ViON's solution ensures WVOT's primary goal of providing Virtualized x86 computer and storage resources is fully met. The ViON-proposed Dell EMC VxBlock 1000 is designed to support the mixing, matching, and sharing of multiple resources in one optimized system.

This is accomplished by allowing the ***scaling of compute, storage and network*** resourced independently of each other. Its future-proof design will allow WVOT to deploy a system today with specialized resources to address all current workloads (out of one system). As workload requirements change, WVOT can reassign workloads or easily add new next generation technologies when they become available.

Additionally, ViON's IaaS operational model allows WVOT the flexibility to scale up or down the amount of physical infrastructure, and accompanying costs. For example, WVOT will be

able to expand and contract the number of base solutions for any tier as well as the compute nodes and the amount of performance and volume storage for each base solution deployment.

On-Premise Infrastructure (4.2.1.1):

4.2.1.1.1 Tiered Solution.

The State seeks a tiered pricing model for the proposed infrastructure solution. The tiering delineation is established by business objectives. Each solution tier should be designed to leverage a three (3) line item structure as outlined below. Please also see mandatory minimum specifications for below tiers and expansions in sections 4.2.4.3.5, 4.2.4.3.6, and 4.2.4.3.7.

ViON proposes a tiered solution and pricing model for on-premise infrastructure that fully meets or exceeds VVOT requirements. Each pricing tier is carefully architected to exceed the relevant business objectives as required in solicitation sections 4.2.1.1.1.4, 4.2.1.1.1.5 and 4.2.1.1.1.6.

Details on how ViON's proposed solutions exceed requirements are provided in our responses to the individual sections in this document. ***Each tier uses a three line-item pricing structure*** in the cost sheet, with the line items for each tier corresponding to a tier base (4.2.1.1.1.1), tier node expansion (4.2.1.1.1.2) and tier storage expansion (4.2.1.1.1.3).

4.2.1.1.1.1 Tier Base

The base line item is intended to provide the complete solution of the associated tier solutions at one (1) data center location. The base line item can also be leveraged by the state to implement an offsite data backup and/or disaster recovery capability of the associated tier. The base line item should include all required components (hardware, software, middleware, equipment, networking, licensing, support, implementation & firmware management services) to successfully operate the associated tiers.

ViON's base line item ***meets all requirements*** as laid out in solicitation section 4.2.1.1.1.1. We propose the Dell EMC VxBlock System 1000 converged infrastructure solution as the complete tier base solution for each of the three required performance tiers. ***Each ordered base line item can be deployed at one (1) data center location. Base line items can also be leveraged by the State to implement an offsite data backup and/or disaster recovery*** capability for the associated tier. In addition, ***each base line item includes all required components*** (hardware, software, middleware, equipment, networking, licensing, support, implementation & firmware management services) to successfully operate the associated tiers. ViON ***meets and exceeds*** Technical specifications required for the Base Tier as noted in section 4.2.4.3.5.

ViON Meets or Exceeds all Tier Technical Requirements:

- ✓ Provides best solution for WVOT Requirements
- ✓ Anticipates Surge Requirements
- ✓ Allows for expansion and contraction

4.2.1.1.1.2 Tier Node Expansion

The tier node expansion line item provides the ability to expand or contract the processing capability (cores & volatile memory) of an existing base solution of the same tier.

Expansion and contraction of compute nodes of existing base solutions of the same tier are accommodated by our tier node expansion line item. ViON's proposed solution for the tiered

solution is based upon the Dell EMC VxBlock 1000 which utilizes Cisco UCS B200 blade servers for compute.

Tier node expansion (i.e. compute node expansion) may be expanded and/or contracted by WVOT at any time above the amount of compute that is delivered as the "minimum" requirement for the same base tier solutions themselves. Tier Node Expansion is priced on a per-node basis, and each Tier Node Expansion line item will comprise all necessary components to expand the base tier with additional compute nodes. This includes the node itself, CPUs, RAM, local storage (if any), and expansion cards (i.e. network cards or HBAs) and blade chassis when required for expansion. ViON ***EXCEEDS*** all Tier Node expansion requirements identified in section 4.2.4.3.6. The Node Expansion for all tier levels have the ability to be provisioned by the State ***exceeding*** the following minimum specifications: 12 CPU core expansion, 256GB RAM.

4.2.1.1.1.3 Tier Storage Expansion

The tier storage expansion line item provides the ability to expand or contract the storage capability of an existing base solution of the same tier. Multiple storage types can be provided as options but should be scoped/sized to align to the single, per tier, line item pricing.

Expansion and contraction of same tier storage capability are accommodated by ViON's tier node storage expansion solution.

ViON's proposed solution for the tiered solution is based upon the Dell EMC VxBlock 1000 which utilizes various Dell EMC storage solutions for volume and performance storage. The choice of storage platform varies depending upon the tier of service chosen. Tier Storage Expansion for volume and performance storage needs have been scoped/sized to align to the single, per tier, line item pricing and may be expanded and/or contracted by WVOT at any time above the amount of volume and performance storage that is delivered as the "minimum" requirement for the base tier solutions themselves. The Storage Expansion for all tier levels has the ability, to be provisioned by the State, and ViON ***meets or exceeds*** the following minimum specifications identified in section 4.2.4.3.7: Performance Storage of 10TBVolume Storage of 25TB.

ViON's Tier Storage Expansion for storage is based upon the following products:

- For Tiers 0, 1 and 2 volume storage – Dell EMC's Isilon H500 storage array
- For Tier 0 performance storage – Dell EMC's Unity 680F storage array
- For performance storage for Tiers 1 and 2 – Dell EMC's PowerMax 8000 storage array

4.2.1.1.1.4 Tier Level: 0
Tier Type: Limited Performance Tier Primary Business Driver: Cost
Tier Goals: Tier O is the intended service:
When lowest cost operational expense is the primary business driver.
For hosting non-critical (deferrable services) applications with reduced performance requirements.
For applications with limited backup requirements.
For applications with limited to no disaster recovery objectives.
When best-effort hardware service support levels are acceptable.

ViON's solution for Tier Level O meets WVOT requirements as stated in solicitation section 4.2.1.1.1.4.

ViON Provides Enterprise-Class Hardware and Support Services:

- ✓ For all Tiers
- ✓ For all Expansion Components
- ✓ For all Backup Solutions

Our proposed Dell EMC VxBlock 1000 for Tier Level 0 was ***designed with the lowest operational expense in mind*** and is ***ideal for hosting non-critical (deferrable services) applications with reduced performance requirement and limited backup requirements with little to no disaster recovery objectives.*** ViON will provide the same ***enterprise-class hardware service and support levels*** across all tiers and expansion components as well as on the enterprise data backup solution ***exceeding this requirement.***

The base orderable solution for the proposed VxBlock 1000 for Tier 0 is comprised of the following:

- One (1) Cisco UCS 5108 blade chassis
- Two (2) Cisco UCS M200 M5 blade servers, with each server containing:
  - Two (2) Intel Xeon Gold (Cascade Lake) 6242 processors that each contain sixteen (16) cores running at 2.80Ghz per core
  - 576GB of RAM
- One (1) Dell EMC Unity 680F performance storage subsystem provisioned with 500GB of performance storage. Additional performance storage is provisioned via the Performance Storage expansion SLIN for Tier 0
- One (1) Dell EMC Isilon H500 volume performance storage subsystem provisioned with 1TB of volume storage. Additional volume storage is provisioned via the volume storage expansion SLIN for Tier 0
- All necessary switching, cabling, PDUs, racks and other ancillary equipment as outlined in the table below

ViON's proposed Tier 0 solution includes the following infrastructure with each orderable base solution:

Tier 0 Solution		
Infrastructure Type	**Orderable Base Solution**	**Quantity**
Switching	Cisco Nexus 31108TC-V (48x10G,6x100G or 40G QSFP+, PSE)	2
	Cisco Nexus 9300 (36p 40/100G QSFP28)	2
	Cisco UCS Fabric Interconnect	2
Management	Cisco UCS C220M5SX	3
Compute	Cisco UCS 5108 Blade Chassis	1
	Cisco UCS B200 M5 Blade Server	2

TIER 0 SOLUTION		
Infrastructure Type	Orderable Base Solution	Quantity
SAN	Cisco MDS-9396T Switch w/48 32G SFPs PSE	2
Storage	Unity 680F DPE 25 x 2.5 Dell FLD RCK	1
	Dell EMC Isilon H500	4
Software	VMware vSphere Ent Plus (per CPU)	10
	Microsoft Windows Server Std 2012 R2, Supports 2 VM's	2
Rack	Panduit IPI Compute Cabinet, 700mm x 1200mm (CRS)	1

Figure 1:ViON's proposed Tier 0 solution includes the following infrastructure

4.2.1.1.1.5 Tier Level: 1
Tier Type: Balanced Performance Tier
Primary Business Driver: Balanced combination between cost and performance
Tier Goals: Tier 1 is the intended service:
For hosting both deferrable and important applications with standard performance capabilities requirements.
For applications with standard data backup requirements. Deferrable services: twelve (12) hours RPO
Important services: one (1) hour RPO
For applications with standard disaster recovery objectives.
Deferrable services: twelve (12) hours RTO
Important services: four (4) hours RTO

ViON's solution for Tier Level 1 ***meets WVOT requirements*** as stated in solicitation section 4.2.1.1.1.5. ViON's proposed Dell EMC VxBlock 1000 for Tier Level 1 was ***designed with a balanced combination*** between cost and performance in mind and is intended to host both deferrable and important applications with standard performance capabilities and requirements. This Tier 1 configuration was architected for applications with standard data backup requirements and provides the following:

- Deferrable services: twelve (12) hours RPO
- Important services: one (1) hour RPO

This Tier 1 configuration was architected for applications with standard data disaster recovery requirements and provides the following:

- Deferrable services: twelve (12) hours RTO
- Important services: four (4) hours RTO

ViON will be providing the same enterprise-class hardware service and support levels across all tiers and expansion components as well as on the enterprise data backup solution. The base orderable solution for the proposed VxBlock 1000 for Tier 1 is comprised of the following:

- One (1) Cisco UCS 5108 blade chassis

- Two (2) Cisco UCS M200 M5 blade servers, with each server containing:
  - Two (2) Intel Xeon Gold (Cascade Lake) 6242 processors that each contain sixteen (16) cores running at 2.80Ghz per core
  - 576GB of RAM
- One (1) Dell EMC PowerMax 8000 storage subsystem provisioned with 500GB of performance storage. Additional performance storage is provisioned via the Performance Storage expansion SLIN for Tier 1
- One (1) Dell EMC Isilon H500 volume performance storage subsystem provisioned with 1TB of volume storage. Additional volume storage is provisioned via the volume storage expansion SLIN for Tier 1
- All necessary switching, cabling, PDUs, racks and other ancillary equipment as outlined in the table below

ViON is providing Dell EMC PowerMax 8000 as the performance storage system for Tiers 1 and 2. PowerMax provides the option for the State to apply protection service levels by application ensuring that critical applications operate at their necessary levels of performance, and prevents a single application from utilizing more performance than it needs. This ability to set service levels is ideal for the State when operating via an 'aaS' model.

We recommend that the State utilize this inherent PowerMax capability to set application protection and performance levels in order achieve specific RPO and RTO targets. Specifically, ViON proposes the same base solution for Tiers 1 and 2, pricing them identically, and recommends that the State utilize the PowerMax features to deliver RPO/RTO-differentiated application services to its customer base. ***As these features are inherent to PowerMax and are not licensed in addition to any base features, ViON will provide this capability to the State on both Tiers 1 and 2.***

VION'S SOLUTION PROVIDES SAME BASE SOLUTION FOR TIER 1 & 2:

- ✓ Leverages features across both tiers
- ✓ Priced the same to provide cost efficiencies
- ✓ RPO/RTO Services inherent in PowerMax – No Separate Licensing

Some examples of how service levels might be applied to applications being run by the State's customers follow:

Protected Application

A storage administrator wants to ensure that a set of SGs is protected from the performance impact of other, noncritical applications that use the storage array.

In this case, the administrator assigns the Diamond service level to the critical SGs and sets lower-priority service levels on all other SGs.

For instance:

- An enterprise critical OLTP application requires almost immediate response to each I/O operation. The storage administrator may assign the Diamond level to its SGs
- A batch program that runs overnight has less stringent requirements. So, the storage administrator may assign the Bronze level to its SGs

Service Provider

A provider of storage for external customers has a range of prices. Storage with lower response times is more costly than that with longer response times.

In this case, the provider uses service levels to establish SGs that provide the required range of performance. An important part of this strategy is the use of the Silver and Bronze service levels to introduce delays even though the storage array could provide a shorter response time.

Relative Application Priority

A site wants to have the best possible performance for all applications. However, there is a relative priority among the protected applications.

To achieve this, the storage administrator can assign Diamond, Platinum, and Gold to the SGs that the applications use. The SGs for the higher priority applications have the Diamond service level. The Platinum and Gold service levels are assigned to the remaining SGs depending on the relative priority of the applications.

In normal conditions, there is no delay to any SG because the array has the capacity to handle all I/O requests. However, should the workload increase, and it is not possible to service all I/O requests immediately, the SGs with Platinum and Gold service levels begin to experience delay. This delay, however, is in proportion to the service level allocated to each SG.

ViON's proposed Tier 1 solution includes the following infrastructure with each orderable base solution:

Tier 1 Solution		
Infrastructure Type	Orderable Base Solution	Quantity
Switching	Cisco Nexus 31108TC-V (48x10G,6x100G or 40G QSFP+, PSE)	2
	Cisco Nexus 9300 (36p 40/100G QSFP28)	2
	Cisco UCS Fabric Interconnect	2
Management	Cisco UCS C220M5SX	3
Compute	Cisco UCS 5108 Blade Chassis	1
	Cisco UCS B200 M5 Blade Server	2
SAN	Cisco MDS-9396T Switch w/48 32G SFPs PSE	2
Storage	EMC PowerMax 8000 PRO BASE 2048GB	1
	Dell EMC Isilon H500	4
Software	VMware vSphere Ent Plus (per CPU)	10
	Microsoft Windows Server Std 2012 R2, Supports 2 VM's	2
Rack	Panduit IPI Compute Cabinet, 700mm x 1200mm (CRS)	2

Figure 2: ViON's proposed Tier 1 solution infrastructure

4.2.1.1.1.6 Tier Level: 2
Tier Type: High Performance Tier
Primary Business Driver: High performance/Disaster Recovery
Tier Goals: Tier 2 is the intended service:
For hosting both important and critical applications with high performance capabilities requirements.
For applications with critical data backup requirements.
Important services RPO of approximately one (1) hour
Critical services RPO of less than 15 minutes
For applications with critical disaster recovery objectives. o Important services RTO less than four (4) hours
Critical services RTO of less than two (2) hours
When premium hardware service support levels are required.

ViON's proposed Dell EMC VxBlock 1000 for Tier Level 2 was **designed with high performance/disaster recovery in mind and is intended to host both important and critical applications with high performance capabilities and requirements.**

This Tier 2 configuration was architected for applications with standard ***data backup requirements*** and provides the following:

- Important services RPO of approximately one (1) hour
- Critical services RPO of less than 15 minutes

This Tier 2 configuration was architected for applications with standard ***data disaster recovery requirements*** and provides the following:

- Important services RTO less than four (4) hours
- Critical services RTO of less than two (2) hours

ViON will provide the ***same enterprise-class hardware service and support levels across all tiers*** and expansion components ***as well as on the enterprise data backup solution***. The base orderable solution for the proposed VxBlock 1000 for Tier 2 is comprised of the following:

- One (1) Cisco UCS 5108 blade chassis
- Two (2) Cisco UCS M200 M5 blade servers, with each server containing:
    - Two (2) Intel Xeon Gold (Cascade Lake) 6242 processors that each contain sixteen (16) cores running at 2.80Ghz per core
    - 576GB of RAM
- One (1) Dell EMC PowerMax 8000 storage subsystem provisioned with 500GB of performance storage. Additional performance storage is provisioned via the Performance Storage expansion SLIN for Tier 2
- One (1) Dell EMC Isilon H500 volume performance storage subsystem provisioned with 1TB of volume storage. Additional volume storage is provisioned via the volume storage expansion SLIN for Tier 2

- All necessary switching, cabling, PDUs, racks and other ancillary equipment as outlined in the table below

ViON is providing Dell EMC PowerMax 8000 as the performance storage system for Tiers 1 and 2. PowerMax provides the option for the State to apply protection service levels by application ensuring that critical applications operate at their necessary levels of performance, and prevents a single application from utilizing more performance than it needs. This ability to set service levels is ideal for the State when operating in an 'aaS' model.

It is ViON's recommendation that the State utilize this inherent capability within PowerMax to set application protection and performance levels in order achieve specific RPO and RTO targets.

ViON is proposes the same base solution for Tiers 1 and 2, and pricing them identically, and recommending that the State utilize the features of PowerMax to deliver RPO/RTO-differentiated application services to its customer base.

As these features are inherent to PowerMax and are not licensed in addition to any base features, ViON will provide this capability to the State on both Tiers 1 and 2.

Here are some examples of how service levels might be applied to applications being ran by State's customers:

Protected Application

A storage administrator wants to ensure that a set of SGs is protected from the performance impact of other, noncritical applications that use the storage array. In this case, the administrator assigns the Diamond service level to the critical SGs and sets lower-priority service levels on all other SGs.

For instance:

- An enterprise critical OLTP application requires almost immediate response to each I/O operation. The storage administrator may assign the Diamond level to its SGs
- A batch program that runs overnight has less stringent requirements. So, the storage administrator may assign the Bronze level to its SGs

Service Provider

A provider of storage for external customers has a range of prices. Storage with lower response times is more costly than that with longer response times. In this case, the provider uses service levels to establish SGs that provide the required range of performance. An important part of this strategy is the use of the Silver and Bronze service levels to introduce delays even though the storage array could provide a shorter response time.

Relative Application Priority

A site wants to have the best possible performance for all applications. However, there is a relative priority among the protected applications. To achieve this, the storage administrator can assign Diamond, Platinum, and Gold to the SGs that the applications use. The SGs for the higher priority applications have the Diamond service level. The Platinum and Gold service levels are assigned to the remaining SGs depending on the relative priority of the applications.

In normal conditions, there is no delay to any SG because the array has the capacity to handle all I/O requests. However, should the workload increase, and it is not possible to service all I/O requests immediately, the SGs with Platinum and Gold service levels begin to experience delay. This delay, however, is in proportion to the service level allocated to each SG.

ViON's proposed Tier 2 solution includes the following infrastructure with each orderable base solution:

TIER 2 SOLUTION		
Infrastructure Type	Orderable Base Solution	Quantity
Switching	Cisco Nexus 31108TC-V (48x10G,6x100G or 40G QSFP+, PSE)	2
	Cisco Nexus 9300 (36p 40/100G QSFP28)	2
	Cisco UCS Fabric Interconnect	2
Management	Cisco UCS C220M5SX	3
Compute	Cisco UCS 5108 Blade Chassis	1
	Cisco UCS B200 M5 Blade Server	2
SAN	Cisco MDS-9396T Switch w/48 32G SFPs PSE	2
Storage	EMC PowerMax 8000 PRO BASE 2048GB	1
	Dell EMC Isilon H500	4
Software	VMware vSphere Ent Plus (per CPU)	10
	Microsoft Windows Server Std 2012 R2, Supports 2 VM's	2
Rack	Panduit IPI Compute Cabinet, 700mm x 1200mm (CRS)	2

Figure 3: ViON's proposed Tier 2 solution infrastructure

4.2.1.1.2 Managed Services Scope.

The managed-services scope of the on- premise infrastructure is specifically limited to the infrastructure provided under this contract. The State's existing infrastructure is not included within the scope of the managed services scoping goals described below:

ViON includes Managed Services to meet the WVOT requirements under this contract and understands WVOT's ***existing infrastructure is not included in stated scoping goals***. Our proposed Managed Services can be used on an as-needed-basis by WVOT. ViON will deliver a talented, experienced team that is accustomed to working in environments across State, Local, and Federal agencies. Our services deliver the following capabilities to the WVOT:

- **Managed Services** – Dedicated teams managing the WVOT technology infrastructure provided under this contract. Our managed services can be delivered onsite or remotely, as applicable and will deliver:
    - Support of the ***physical layer*** of provided infrastructure

- Support of the ***firmware layer*** of the provided infrastructure
- Support of the ***licensing and hardware*** of the provided infrastructure

- Managed Services providing **mentoring, on-the-job training, operating run books, and other documentation** on an as needed basis

ViON managed services will deliver remote management of the VxBlock 1000 using its native turnkey VxBlock Central Software which provides a centralized single pane for unified remote management and administration.

Through VxBlock Central's remote UI, and integration with VMWare vRealize software, the entire operations lifecycle, including system installation and configuration, system monitoring, patch updates, optimization, and system expansion can be remotely managed.

Additionally, ViON's Managed Services can deliver other capabilities ***beyond the current solicitation scope*** and requirements if future needs are realized, and it allows ViON to advise WVOT on such solutions as:

- Enterprise Cloud Managed Services delivering automation and orchestration to the WVOT's hybrid multi-cloud enterprise
- Managed Services for compute, network, big data, and cloud environments through SLA-based services

ViON's years of delivering Managed Services to our customers helps remove the burden of managing IT infrastructure. Our services are designed to reduce WVOT's overall risk – we focus on the technology so customers can focus on the mission. Our experts work across a broad range of technologies to maximize current IT investments.

4.2.1.1.2.1 Physical Layer: services and support of the physical layer of the provided infrastructure.

ViON's Managed Services teams will help alleviate the state's burden of managing the physical infrastructure procured under this contract. Our ViON Managed Services staff ***will provide, either onsite or remote infrastructure management of physical hardware*** including the use of the Dell VxBlock Central UI remote management tool. Our physical infrastructure managed services include:

- System health including operational state, calculated system health and health reporting
- Advanced, real-time CI-level alerting including operational state alerts, performance alerts, call home alerts, customer alerts and alert forwarding
- Hardware optimization
- OEM Escalation and Resolution for Break / Fix Failures
- Advanced hardware troubleshooting

ViON Managed Services – When you need it!

- ✓ Physical Layer
- ✓ Firmware Layer
- ✓ Licensing and HW Support
- ✓ Future Requirements TBD Support
- ✓ Mentoring and Documentation

4.2.1.1.2.2 Firmware Layer: services and support of the firmware layer of the provided infrastructure.

ViON will deliver onsite or remote, Managed Services to support the ViON solution. Updates that impact security vulnerabilities will be monitored and applied on an ongoing basis, while patches, upgrades, and firmware updates will be applied on regularly scheduled intervals. Our Managed Services can deliver operations and maintenance services such as:

- Firmware Updates – rolling updates to reduce downtime – we manage the process of updates throughout the environment as part of the managed service, seamlessly and with zero to minimal downtime
- Operating System security patches
- Operating System upgrades (minor releases only)
- Hardware firmware upgrades
- Addressing identified security vulnerabilities

To the extent possible, we will perform initial tests for all updates, changes, and upgrades to validate the process and ensure the updates or changes do not negatively impact the operation of the system. ViON will then coordinate with WVOT before implementing patches and updates to the solution. ***Updates will be performed remotely as permitted by WVOT, and onsite for updates that require physical presence or to comply with security requirements.***

4.2.1.1.2.3 Licensing & Hardware Support: licensing relating to the support of the physical infrastructure, ensuring equipment is properly supported by the provider.

ViON's Managed Services staff and Program Management Office (PMO) will assist the state through licensing and hardware support of the physical infrastructure ensuring equipment is properly maintained by the provider. Our team will provide asset management including enhanced inventory hierarchy, relationships, and associations of components in the VxBlock systems. Our team accomplish this in collaboration with the ViON Support Center, ***fielding all break/fix calls on a 24x7x365 basis,*** as well as with the Project Manager overseeing the contract with WVOT.

ViON's Managed Services will help the WVOT reduce license management risks and stay compliant by tracking license expiry dates and being notified in advance of license breaches. We will help WVOT manage license purchases by having a consolidated view of the deployed licenses.

Within the VxBlock Central management dashboard, ViON will help manage the inventory, Release Certification Matrix (RCM), and Advanced Management via secure remote services automatically validating compliance and delivering proactive diagnostics and efficient incident management resolution.

4.2.1.1.2.4 The following aspects of services are NOT included in the scope: operating system, virtualization, software, and applications serviced and supported by WVOT.

ViON acknowledges, understands, and accepts that the operating system, virtualization, software, and applications running on ViON provided infrastructure are outside the scope of ViON's management.

4.2.1.1.3 Network Infrastructure

4.2.1.1.3.1 Vendor should provide all components necessary to physically interconnect and enable logical interconnection of the infrastructure to the boundary edge of the provided infrastructure.

ViON will provide all components necessary to physically interconnect and enable logical interconnection of the infrastructure to the boundary edge of the provided infrastructure. We understand that procurement of hardware, software, and services to provide network infrastructure and services for the internal State's network are not included in the scope of this service.

4.2.1.1.3.2 WVOT has a separate contract with other providers to procure hardware, software, and services to provide network infrastructure connectivity from the edge of the on-premise infrastructure solution(s) to the internal state network, and therefore are NOT included within the scope of this contract.

ViON understands that the State has existing and separate contracts with other providers to procure hardware, software, and services to provide network infrastructure connectivity for all State infrastructure and network components and locations that reside outside of ViON's proposed on-premise infrastructure solutions, and they are out of scope for this contract.

4.2.1.1.3.3 Data transport services, as it pertains to MPLS, site-to-site, and cloud interconnect connections are NOT included in the scope of the solution.

ViON understands that data transport services, as pertaining to MPLS, site-to-site, and cloud interconnect connections are ***NOT*** included in the scope of our proposed solution or this contract.

4.2.1.1.4 Architecture and Design

Vendor's solution architecture should be designed to have accommodate future growth without requiring a major redesign during the contract.

ViON's proposed solution architecture, consisting of Dell EMC vBlock 1000 for the on-premise infrastructure, is a very mature and stable product that was designed specifically to enable future growth in a 3-tier architecture without requiring any major redesign. The base solution main components have been validated and tested and have remained stable throughout the product evolution. ***The components contained within the base solution are natively expandable via a traditional "scale out" methodology of adding additional compute nodes, storage shelves, racks and networking gear as needed to expand the solutions.***

Additionally, ViON's proposed Enterprise Data Backup solution, Dell Technologies' IDPA, has also been ***designed with simplicity and expandability in mind. IDPA can accommodate future growth*** by scaling the "Base" solution via "Expansion" SLINs as outlined in the Cost Sheet, without requiring a major redesign of the backup implementation.

4.2.1.1.5 Physical Data Center Locations

The scope of the contract is to provide the on-premise infrastructure for on-premise data center location(s) within the State of West Virginia or any location on the United States East Coast. The data center locations are outside the scope of this contract and will be managed by the State or through a separate contract. The initial location for physical equipment provided through this

contract is intended to be West Virginia Regional Technology Park, 2020 Union Carbide Drive, Building 6000, South Charleston, Kanawha County, West Virginia, USA

ViON understands that the scope of this contract is limited to on-premise infrastructure for on-premise data center locations within the State of West Virginia, or any location on the United States East Coast. We additionally understand that these data center locations are outside of the scope of this contract and will be managed by the State through a separate contract.

The above notwithstanding, wherever the location of the data center, ViON has experience and engineers with the ability to maintain data centers throughout the continental United States and is able to support any new or alternate locations the State of West Virginia determines.

4.2.1.1.6 Data Center Footprint.

Any solution proposed by the Vendor should make use of the smallest footprint (e.g. rack space) possible. WVOT has a finite number of racks in the initial lease of our data center space and making efficient use of the racks is going to be a factor in our award decision. Vendor should include the total number of racks needed for their solution in the response to this RFP. WVOT's co-located lease defines the rack size requirements to be a standard 42U (either 2-post or 4-post) rack.

ViON's proposed solutions for on-premise infrastructure and Enterprise Data Backup makes use of the smallest footprint and shall be contained within standard 42U data center racks (either 2-post or 4-post). While the total footprint of our proposed solutions is dependent upon the total quantity of solutions ordered within each tier, the following rack quantities will be required of each solution:

- Tier 0: one (1) x 42U rack
- Tier 1: one (1) x 42U rack
- Tier 2: one (1) x 42U rack
- Enterprise Data Backup: one (1) x 42U rack

Please note rack quantities are only indicative of a production environment. Rack count in disaster recovery (DR) will equal rack count in production.

4.2.1.1.7 Rack Specifications.

Vendor's racks used for their solution should have dual power distribution feeds that are connected to separate US standard 220V 30A twist-lock receptacles (L630P plugs should be needed to mate to L630R receptacles) at the data center location. All equipment should have redundant power supplies that can absorb the entire electrical load for that piece of equipment should one fail. Vendor should install power and network connectivity from the bottom of the rack to the top of the rack using standard methods for ensuring the wiring within the rack is kept neat and organized.

ViON's proposed solution, the Dell EMC VxBlock 1000, comes in a black (or white upon request) Intelligent Physical Cabinet with features that include ***state-of-the-art cable management, optimal energy efficiency design, real-time intelligence reporting, access controls, and door / temperature sensors.***

The Intelligent Physical Cabinet ***will contain dual redundant power distribution feeds that are connected to separate US standard 220V 30A circuits via L6-30p plugs which will mate with the State's required L6-30R receptacles.*** Power connections will be routed below the cabinet in order to keep the State's data center more organized.

4.2.1.1.8 Physical Cabinets Access Control.

Vendor's solution should address physical security controls as it relates to cabinets. Vendor should provide documentation on how their proposed physical cabinet solution is auditable with respect to security controls.

ViON's proposed tiered solution, based on Dell EMC VxBlock 1000, includes Panduit Intelligent Platform Infrastructure (IPI) cabinets to house each solution. The IPI solution consists of multiple components that combine to provide advanced physical infrastructure information.

The Panduit IPI solution meets the specific requirement of 4.2.1.1.8 by providing both manual and automated physical locking capabilities of the cabinet. Additionally, these physical security events, whether initiated manually or via software controls, are logged within the IPI appliance for future auditing needs by WVOT.

ViON meets the documentation requirement by providing the Panduit IP User Manual in Appendix D, and specifically documentation outlining the auditable security controls for the physical cabinet are provided on page 10 in the Panduit IPI Troubleshooting Guide located in Appendix C.

IPI Appliance

The IPI solution contains the IPI Appliance that is configured within the IPI cabinet. ***The IPI Appliance provides an intelligent gateway to gather information about power, thermals, security, alerts, and all components in the physical infrastructure for each cabinet.***

Dell EMC Vision Intelligent Operations uses SNMP to poll the status of the IPI Appliance and send the results to the MSM API and management dashboard. The IPI Appliance incorporates door thermal sensors, door handle sensors, HID security door handles, and intelligent PDUs. The IPI Appliance is the central point of information for all intelligent operations in the cabinet. The PDUs enable remote monitoring capabilities in each IPI cabinet and outlet-level control for each PDU. Each cabinet has its own appliance with standard, redundant power. The IPI Appliance is configured with default settings in the factory.

Within the solution, there are environmental, security, and power requirements, in addition to asset and thermal management considerations.

IPI Cabinet

All cabinets provide a customized cable management system and include castors. Seismic brackets are included in the rack kit.

The IPI cabinet is configured with an IPI Appliance and is of the following size:

- 700mm wide x 1200mm deep, 42U base cabinet

4.2.1.1.9 Infrastructure Ownership.

The State does not stipulate the solution model as it pertains to the ownership of the on-premise infrastructure provided by the vendor. The vendor should describe the concept of ownership

within their proposal and explain how the model supports the goals and objectives of this solicitation.

ViON's concept of ownership under our aaS model as proposed for this effort reflects ViON retaining ownership of all assets delivered under this solicitation for on-premise infrastructure. While we own the underlying technology, we do not own or have rights to WVOT data nor are there additional fees to access data in our model. Under our model, we manage all delivered assets across the lifecycle of the WVOT contract from procurement of the requested hardware and/or software, to contractually agreed upon Ready for Use (RFU) hand-off criteria, all associated warranty and maintenance agreements and services, and technical refresh of associated assets.

By retaining ownership, ViON can deliver the on-premise IaaS to the WVOT at an all-included monthly cost, providing capacity on demand, and utilizing operational funding to accomplish the State's goals. This in turn will allow the State to reduce unnecessary capital expenditures to buy excess capacity when not needed and eliminate the burden of planning for technical refresh of infrastructure and the expensive out-year maintenance bills.

4.2.1.1.10 On-Premise Infrastructure Proposal.

Vendor should provide documentation outlining how their solution helps the State achieve the goals and objectives outlined in this RFP for on-premise infrastructure. In addition, the documentation should specifically seek to address the following:

ViON's past performance and experience in managing on-premise infrastructure for other customers, combined with the WVOT customer facility and environmental data will drive our solution development for WVOT. Our infrastructure management process, as documented in Appendix A, (example Implementation and Transition Plan developed and followed in support of another Government customer program), provides WVOT with an example of how we can and will aid in meeting the goals and objectives captured in the WVOT RFP. ***We will work with the WVOT team to further develop and continuously refine documentation to address the data center consolidation, cost efficiencies/optimization, data center agility, technical specification, data retrieval, data volume and performance and cost areas of interest addressed in the following sections.***

ViON meets and describes our approach to requirements 4.2.1.1.10.1, 4.2.1.1.10.2., 4.2.1.1.10.3, 4.2.1.1.10.4, 4.2.1.1.10.5, 4.2.1.1.10.6, and 4.2.1.1.10.7 in the following section.

Requirement Section	Requirement	Paragraph Reference	Meets Requirement
4.2.1.1.10.1	Enhancing the State's ability to conduct data center consolidation.	Page 31	YES
4.2.1.1.10.2	Enabling opportunity to address the various business drivers, while seeking cost efficiencies and optimization	Page 31-32	YES
4.2.1.1.10.3	Enabling agility and flexibility in data center resources	Page 32	YES
4.2.1.1.10.4	For each tier, provide a comprehensive outline of the technical specifications of their solution.	Page 33-35	YES

Requirement Section	Requirement	Paragraph Reference	Meets Requirement
4.2.1.1.10.5	Explain how the performance storage is designed to address data retrieval as the primary driver	Page 35-38	YES
4.2.1.1.10.6	Explain how volume storage is designed to address data volume as the primary driver	Page 38-39	YES
4.2.1.1.10.7	Explain how your storage offerings are specifically designed to balance performance and cost efficiencies	Page 39	YES

Figure 4: How ViON Meets WVOT Goals and Objectives

4.2.1.1.10.1 Enhancing the State's ability to conduct data center consolidation.

ViON's proposed solutions, based upon Dell EMC's VxBlock 1000, enhances the State's ability to conduct data center consolidation by providing a modernized single consolidated converged infrastructure platform to replace the State's aging heterogenous IT infrastructure. Consolidation is improved due to the compute and storage density that is provided by each single Dell EMC VxBlock 1000 as compared to the state's aging 3-tier legacy architectures.

Migrating to a VxBlock 1000 provides the State with a highly integrated full stack solution that is supported top to bottom by a single vendor, simplifying the support process. A VxBlock 1000 is engineered and manufactured following strict repeatable standards and best practices. In fact, the learnings from every VxBlock that is deployed contribute to the continued improvement of future guidelines and best practices.

VXBLOCK 100 SYSTEM ADVANTAGE

- ✓ Single Consolidated Converged Infrastructure Platform
- ✓ Continually Improves Through Thousands of Deployments
- ✓ Up to 91% Fewer Reported Outages

This means ViON's Dell EMC solution continually improves upon the guidelines and best practices achieved from the thousands of deployments that have already taken place. The reliability and availability of a VxBlock 1000 is such that it will allow WVOT the confidence to run the most mission-critical workloads which have to date been dispersed across many different data centers and types of infrastructure.

According to an IDC white paper, customers who deployed a VxBlock System reported up to 91% fewer impactful unplanned outages.

4.2.1.1.10.2 Enabling opportunity to address the various business drivers, while seeking cost efficiencies and optimization.

ViON's proposed solution, based upon Dell EMC VxBlock 1000, addresses the specific business drivers laid out for each of the three (3) base solution tiers as outlined in the tier specifications in 4.2.1.1.1.4, 4.2.1.1.5, and 4.2.1.1.1.6. Specifically, the Dell EMC VxBlock 100 addresses the business drivers of cost for Tier 0, balanced cost and performance for Tier 1, and high performance / disaster recovery for Tier 3. Additionally, the VxBlock 1000 helps drive costs efficiencies and optimization for WVOT via the following mechanisms.

Simplified Operations

By fully integrating all the components into one VxBlock 1000 and delivering a turnkey engineered user experience, ViON's solution offloads the burden of component integration and testing from WVOT.

All of the component interoperability testing, and all the ongoing testing and certification of component upgrades are handled by the OEM and ViON, allowing WVOT to focus on business needs (and less on infrastructure management). According to the IDC white paper referred to above, customers who deployed a VxBlock System reported spending up to 52% less time on infrastructure management (keeping the lights on).

More Efficient Operations

The VxBlock 1000 takes efficient operations a step further. With the VxBlock 1000 WVOT can benefit for the unprecedented choice of mixing multiple different storage types, compute options, networking, and data protection options in one system to support all required mixed workloads.

One system to deploy. One system to manage. One system to support and maintain.

And for those large environments, where multiple VxBlock 1000s are required, WVOT can enjoy the simplicity and efficiencies of centralized management. The VxBlock 1000 also allows WVOT to pool and share the resources within the system to maximize utilization, eliminate stranded capacity, and increase return on investment (ROI). When workloads requirements change, resources can be reassigned to support new workload requirements.

Lower Cost of Operations

According to an ESG White Paper, up to 25% of respondents agreed that improved total-cost-of-ownership was the most significant benefit to an organization deploying a converged infrastructure. ***Moreover, according to an IDC White Paper, VxBlock System customers saw up to an eight (8) month payback, up to 640% 5-year ROI and up to 61% lower cost of operations.***

Faster Time-To-Value

By deploying a VxBlock System WVOT is well on the way to IT Transformation and can be assured of a faster time-to-value than traditional 3-tier architectures. With a VxBlock System you can expect faster deployment time, up to a 34% faster application development lifecycle, and up to 80% faster upgrades. ***Additionally, with the VxBlock 1000 WVOT will receive faster problem resolution with one call support for all components, as well as faster upgrade planning with access*** to the Dell EMC Converged Platforms and Solutions Technical Resource Center Portal providing WVOT with real-time awareness and a proactive approach to lifecycle assurance.

4.2.1.1.10.3 Enabling agility and flexibility in data center resources.

ViON's proposed solution, based upon Dell EMC VxBlock 1000, removes the complexities out of IT so that WVOT can benefit from greater business agility, increased data center efficiency, and better operational simplicity.

The VxBlock 1000 gives WVOT the flexibility of choosing the right mix of compute, storage and virtual resources and data services, today and in the future, for WVOT's evolving application requirements. If requirements change, thanks to the "aaS" model that ViON is proposing WVOT can safely add new resources or remove resources or realign resources to address those new requirements.

4.2.1.1.10.4 For each tier, provide a comprehensive outline of the technical specifications of their solution.

Please see ViON's response to 4.2.1.1.1.4, 4.2.1.1.5 and 4.2.1.1.6 and those noted at sections 4.2.4.3.5, 4.2.4.3.6, and 4.2.4.3.7 for a comprehensive outline and information regarding the technical specifications for each tier of ViON's proposed solution and how we meet or exceed each requirement The tables below summarizes each tier.

TIER 0 SOLUTION		
Infrastructure Type	Orderable Base Solution	Quantity
Switching	Cisco Nexus 31108TC-V (48x10G,6x100G or 40G QSFP+, PSE)	2
	Cisco Nexus 9300 (36p 40/100G QSFP28)	2
	Cisco UCS Fabric Interconnect	2
Management	Cisco UCS C220M5SX	3
Compute	Cisco UCS 5108 Blade Chassis	1
	Cisco UCS B200 M5 Blade Server	2
SAN	Cisco MDS-9396T Switch w/48 32G SFPs PSE	2
Storage	Unity 680F DPE 25 x 2.5 Dell FLD RCK	1
	Dell EMC Isilon H500	4
Software	VMware vSphere Ent Plus (per CPU)	10
	Microsoft Windows Server Std 2012 R2, Supports 2 VM's	2
Rack	Panduit IPI Compute Cabinet, 700mm x 1200mm (CRS)	1

Figure 5: ViON's proposed Tier 0 solution infrastructure

TIER 1 SOLUTION		
Infrastructure Type	Orderable Base Solution	Quantity
Switching	Cisco Nexus 31108TC-V (48x10G,6x100G or 40G QSFP+, PSE)	2
	Cisco Nexus 9300 (36p 40/100G QSFP28)	2
	Cisco UCS Fabric Interconnect	2
Management	Cisco UCS C220M5SX	3
Compute	Cisco UCS 5108 Blade Chassis	1
	Cisco UCS B200 M5 Blade Server	2
SAN	Cisco MDS-9396T Switch w/48 32G SFPs PSE	2
Storage	EMC PowerMax 8000 PRO BASE 2048GB	1

	Dell EMC Isilon H500	4
Software	VMware vSphere Ent Plus (per CPU)	10
	Microsoft Windows Server Std 2012 R2, Supports 2 VM's	2
Rack	Panduit IPI Compute Cabinet, 700mm x 1200mm (CRS)	2

Figure 6: ViON's proposed Tier 1 solution infrastructure

TIER 2 SOLUTION		
Infrastructure Type	**Orderable Base Solution**	**Quantity**
Switching	Cisco Nexus 31108TC-V (48x10G,6x100G or 40G QSFP+, PSE)	2
	Cisco Nexus 9300 (36p 40/100G QSFP28)	2
	Cisco UCS Fabric Interconnect	2
Management	Cisco UCS C220M5SX	3
Compute	Cisco UCS 5108 Blade Chassis	1
	Cisco UCS B200 M5 Blade Server	2
SAN	Cisco MDS-9396T Switch w/48 32G SFPs PSE	2
Storage	EMC PowerMax 8000 PRO BASE 2048GB	1
	Dell EMC Isilon H500	4
Software	VMware vSphere Ent Plus (per CPU)	10
	Microsoft Windows Server Std 2012 R2, Supports 2 VM's	2
Rack	Panduit IPI Compute Cabinet, 700mm x 1200mm (CRS)	2

Figure 7: ViON's proposed Tier 2 solution infrastructure

Required by the State	Provided by ViON	Significance/Benefit
24 CPU cores at 2.6Ghz processing speed	64 CPU cores at 2.80Ghz processing speed	**Exceed.** ViON believes the State's virtualization performance and virtual machine density requirements will be better fulfilled with 32 CPU cores per node, and ViON is providing 2 nodes in each base solution. This CPU core density also provides the State better cost efficiencies than 24

Required by the State	Provided by ViON	Significance/Benefit
		CPU cores would in the current generation of Intel Cascade Lake processors. **Increase of 166% CPU Cores.**
512GB RAM	1152GB of RAM	**Exceed.** Based on OEM best practices, ViON believes the State's virtual machine density requirements will be better met with 576GB of RAM per node, and ViON is providing 2 nodes in each base solution. **Increase of 125% of RAM.**
500GB Performance Storage	500GB Performance Storage	**Meet.** ViON agrees with the State that a 500GB starting capacity for Performance Storage in each base tier allows the State the most flexibility when expanding or decreasing Performance Storage via an as-a-Service consumption model.
1TB Volume Storage	1TB Volume Storage	**Meet.** ViON agrees with the State that a 1TB starting capacity for Volume Storage in each base tier allows the State the most flexibility when expanding Volume Storage via an aaS consumption model.

Figure 8: ViON's exceeds required Specifications

4.2.1.1.10.5 Explain how the performance storage is designed to address data retrieval as the primary driver.

ViON's proposed performance storage for Tier 0 is Dell EMC's Unity 680F storage array. ***This delivers the following features, fulfilling WVOT's requirement that data retrieval be the primary driver:***

- **Dual-Active Architecture:** Dell EMC Unity storage uses both storage processors (SPs) to serve host I/O and run data operations in an active/active manner, thereby efficiently making use of all available hardware resources and optimizing performance, cost, and density in customer data centers
- **Truly Unified Offering:** Dell EMC Unity storage delivers a full block and file unified environment in a single 2U enclosure. You can use the same pool to provision and host LUNs, consistency groups, NAS servers, file systems, and Virtual Volumes alike. The Unisphere management interface offers a consistent look and feel whether managing block resources, file resources, or both
- **A Modern, Simple Interface:** Unisphere, the Dell EMC Unity management interface, is built with the today's data-center administrator in mind. Using browser-native HTML5, Unisphere can be used across a variety of operating systems and web browsers without the need of additional plug-ins. The interface has been designed to mimic the practical flow of an administrator's daily life, organizing provisioning and management functions into easy-to-find categories and sections
- **Flexible Deployment Options:** With Dell EMC Unity storage, a deployment offering exists for a range of different use cases and budgets, from the virtual offering of Dell EMC UnityVSA to the purpose- built Dell EMC Unity platform. The purpose-built Dell EMC Unity system can be configured as an all- flash system with only solid-state drives, or as a hybrid system with a mix of solid-state and spinning media to deliver the best on both performance and economics
- **Inline Data Reduction:** Data reduction technologies play a critical role in environments in which storage administrators are attempting to do more with less. Dell EMC Unity data reduction aids in this effort by attempting to reduce the amount of physical storage needed to save a dataset, which helps reduce the total cost of ownership (TCO) of a Dell EMC Unity storage system. Dell EMC Unity data reduction provides space savings through the use of data deduplication and compression. Data reduction is easy to manage, and once enabled, is intelligently controlled by the storage system
- **Optional I/O Modules:** A diverse variety of connectivity is supported on the purpose-built Dell EMC Unity platform. I/O modules are offered in 12 Gb SAS (for back-end expansion), 16 Gb Fibre Channel (4-port), 10GbE optical (in 2- and 4-port variants), and 10 GbE and 1 GbE BaseT (4-port). I/O modules that support iSCSI and NAS may be used for both simultaneously
- **Expanded File System:** At its heart, the Dell EMC Unity file system is a 64-bit-based file system architecture that provides increased maximums to keep pace with the modern data center. Provision file systems and VMware NFS datastores in sizes as large as 256 TB and enjoy creating multiple millions of files per directory and subdirectories per directory
- **Native Data Protection:** Security and availability of data are critical concerns for many customers, and Dell EMC Unity storage offers multiple solutions to address this need. Unified snapshots provide point-in-time copies of block and file data that can be used for backup and restoration purposes. Asynchronous replication offers an IP-based replication

strategy within a system or between two systems. Synchronous block replication benefits FC environments that are close together and require a zero-data loss schema. Data at Rest Encryption (D@RE) ensures user data on the system is protected from physical theft and can stand in the place of drive disposal processes, such as shredding

- **VMware Integration:** Discovery of a VMware environment has never been easier, thanks to Dell EMC Unity VMware Aware Integration (VAI). You can use VAI to retrieve the ESXiTM host and vCenter® environment details into Unisphere for efficient management of the virtualization environment. Support for VMware vStorage APIs for Storage Awareness (VASA) and later enables the provisioning and use of VMware® vSphere® Virtual Volumes (vVols), a virtualization storage technology delivered by VMware ESXi. Dell EMC Unity supports vVols for both block and file configurations
- **Multiple Management Paths:** Configure and manage Dell EMC Unity system in the way you are most comfortable. The Unisphere GUI is browser-based and provides a graphical view of the system and its resources. Use Unisphere CLI (UEMCLI) over SSH or a Windows host to run CLI commands against the system. Dell EMC Unity storage also has a full REST API library available. Any function possible in Unisphere is also possible using Dell EMC Unity REST API. Developing scripts or integrating management of the Dell EMC Unity system into existing frameworks has never been easier

ViON's proposed performance storage for Tiers 1 and 2 is Dell EMC's PowerMax 8000 storage array.

This delivers the following features, meeting WVOT's requirement that data retrieval be the primary driver:

- **Unprecedented Performance** and superior performance density delivering up to 15 Million IOPS and 350GB per second (PowerMax 8000) of sustained bandwidth and up to 50% better response times – all without compromising enterprise class features
- **Massive Scale:** performance (millions of IOPS), connectivity (100's of ports), capacity (4 PBe), replications (millions of snaps), and LUNs/devices (64,000)
- **Mission-Critical Availability** that also leverages the gold standard in remote replication, SRDF, to deliver the highest levels of availability
    - Other all-flash or niche NVMe arrays lack a rich set of native data services or place limits on which data services can co-exist on the array. This results in additional data center complexity in terms of vendor management, storage administration and orchestration between application and storage teams to deliver necessary data services. PowerMax dramatically simplifies operations by providing all required data services without limits or compromises
- **Proven Security** features that meet corporate governance and compliance requirements, prevent accidental or malicious intrusion and are compatible with all PowerMax's data services. Key features include but are not limited to: Data-at-rest-encryption (D@RE) with internal and external key management, secure snaps, tamper proof audit logs, and secure access controls

  - Other high-end storage vendors may offer similar security capabilities, but they require customers to make painful feature tradeoffs. PowerMax security features work across all available data services

- **Massive Consolidation** with native support for open systems, mainframe, IBM i, unified block and file, and VMware Virtual Volumes support for diverse mission-critical storage needs
  - No other product in the all-flash market natively supports open systems and mainframe, block, and file, along with IBM i hosts. Others may make claims but require additional infrastructure and hardware to meet the same native capabilities of PowerMax
- **Reliable Protection** with active/active data center replication for high availability that offers non-stop data access and workload mobility, for the ultimate in disaster recovery. Plus, storage-integrated data protection with Dell EMC Data Domain and Dell EMC PowerProtect Storage Direct enables non-intrusive data protection of PowerMax workloads, with up to 20x faster backups and empowers storage administrators to own their data protection
- **Efficiency** with inline deduplication and enhanced compression to minimize storage footprint. Plus, more than 2x better rack density and up to 40% lower power consumption compare to previous models (VMAX 950F)
- **Investment Protection** with no hidden costs through the Future Proof Loyalty Program

4.2.1.1.10.6 Explain how volume storage is designed to address data volume as the primary driver.

ViON's proposed volume storage for Tiers 0, 1 and 2 is Dell EMC's Isilon storage array

This delivers the following features, addressing WVOT's requirement that data volume be the primary driver:

Dell EMC Isilon hybrid storage platforms, powered by the OneFS operating system, use a highly versatile yet simple scale-out storage architecture to speed access to massive amounts of data, while dramatically reducing cost and complexity. The hybrid storage platforms are highly flexible and strikes the balance between large capacity and high-performance storage to provide support for a broad range of enterprise file workloads. The hybrid storage platforms are available in 4 product lines, and the Isilon H500 was chosen for WVOT's specific requirements:

- **H500:** This versatile hybrid platform delivers up to 5 GB/s bandwidth per chassis with a capacity ranging from 120 TB to 720 TB per chassis1. The H500 is an ideal choice for organizations looking to consolidate and support a broad range of file workloads on a single platform

Dell EMC Isilon H500 storage platforms are powered by the OneFS operating system and use a dense, ***modular architecture to provide a powerful, yet simple scale-out storage platform to speed access to unstructured data, while reducing cost and complexity.***

- **Efficiency:** OneFS powered scale-out storage delivers over 80 percent storage utilization versus about 50 percent for traditional platforms. SmartDedupe data deduplication

software enhances storage efficiency to reduce physical storage requirements. The policy-based, automated tiering options allow you to optimize storage resources and further lower costs

- **Flexibility:** OneFS powered storage solutions support all major protocols and data access methods including NFS, SMB, HDFS, HTTP, and FTP. This means that you can support a wide range of applications and workloads on a single platform
- **Data Protection:** The storage is highly resilient and offers N+1 through N+4 redundancy. You may also choose from a variety of efficient and proven enterprise data backup and disaster recovery options
- **Security:** OneFS offers a broad range of security options including FIPS 140-2 level 2 self-encrypting drives, role-based access control (RBAC), secure access zones, SEC 17a-4 compliant WORM data immutability, SMB3 encryption, HDFS Transparent Data Encryption (TDE) and file system auditing

4.2.1.1.10.7 Explain how your storage offerings are specifically designed to balance performance and cost efficiencies.

ViON's proposed storage offerings for Tiers 0, 1 and 2 were specifically selected because they were ***designed to meet the requirement of the State that the storage offerings should balance performance and cost efficiencies***.

For Tiers 0, 1 and 2 Volume Storage, the Dell EMC Isilon was configured with 4TB drives in order to give the State the greatest capacity to grow in a smaller footprint than utilizing 2TB drives.

Specifically, for Volume Storage for Tiers 0, 1 and 2 ViON is delivering 60 x 4TB in a 4-node Isilon H500 cluster, or 240TB raw volume storage in 4U.

For Tier 0 Performance Storage, the Dell EMC Unity 680F was configured with 7.68TB SSD drives in order to give the State the greatest capacity to grow in a smaller footprint than utilizing 2TB drives. Additionally, due to the advanced data reduction features of Isilon, ViON expects the State to achieve a much higher effective capacity than what is being delivered in RAW TB.

Specifically, for Performance Storage for Tier 0 ViON is delivering 6 x 7.68TB SSD drives in a Unity 680F, or 41.9TB raw, 26.29TB usable and a conservative estimated 52.5TB of effective capacity.

For Tiers 1 and 2 Performance Storage, the Dell EMC PowerMax 8000 was configured with 7.68TB drives in order to give the State the greatest capacity to grow in a smaller footprint than utilizing 2TB drives. Additionally, due to the advanced data reduction features of Isilon, ViON expects the State to achieve a much higher effective capacity than what is being delivered in RAW TB.

Specifically, for Performance Storage for Tiers 0, 1 and 2 ViON is delivering 8 x 7.68TB SSD drives in a PowerMax 8000, or 61.4TB raw, 54TB usable and a conservative estimated 108TB of effective capacity.

4.2.1.2 Enterprise Data Backup.

The State seeks an enterprise data backup solution for this contract. The following specifications provide the goals and services included in this solicitation:

The Dell EMC IDPA DP8300 that is being proposed will provide the ability to leverage existing the data protection solution to ensure the smoothest possible integration, migration and transition of existing workloads and backups.

This will minimize deployment complications and overall level of effort and cost.

In addition, existing backup administers will already be familiar with the technology that is being used which will also provide a better overall transition to the new environment.

4.2.1.2.1 Vendor's proposed solution should include applicable, supported hardware, software, middleware, technical dependencies, and managed services (as scoped) to enable an enterprise data backup capability.

ViON's proposed solution for ***Enterprise Data Backup is Dell's Integrated Data Protection Appliance (IDPA).*** This appliance provides the most efficient means of protecting a massive ecosystem of applications and workloads while ***constantly improving time-to-value reducing overall cost and complexity, and decreased growth expectations.***

Most existing data protection solutions require multiple products and vendors to fully implement which can result in extended and complex deployments and are very expensive to manage, administer, and maintain. Most importantly many of these solutions fall short and provide fragmented data protection coverage for customer environments.

DELL IDPA ADVANTAGES:

- ✓ Single Product Vendor Simplifies Management and Reduces Costs
- ✓ Accommodates Small, Medium, Large, or Enterprise Network Environments
- ✓ Provides backup, replication, recovery, deduplication, VM instant access/restore, advanced search, and analytics

Dell-EMC's IDPA is an integrated turnkey solution that reduces the complexity of managing multiple data protection components and vendor maintenance and support requirements. The IDPA simplifies overall installation, deployment and management and provides a powerful enterprise data protection solution that accommodates all ranges of environments (from small, to medium, large and enterprise levels).

The IDPA is a converged and integrated solution that includes all applicable hardware, software, middleware which provides an independent data protection solution that meets all technical dependencies along with the managed services that will be provided as part of this contract to be able to provide an enterprise data backup capability.

The IDPA solution provides backup, replication, recovery, in-line deduplication, VM instant access and restore capabilities, advanced search, analytics, and reporting including some of the industry's best VMware integration. In addition, the solution offers integrated cloud readiness with disaster recovery capabilities to multiple vendors and long-term data retention leveraging object storage – all in a single appliance.

4.2.1.2.2 The solution should be capable of providing industry best practices in enterprise data backup capabilities.

All IDPA components are capable of providing industry best practices in enterprise data backup capabilities and ViON deploys the IDPA ***using industry best practices*** which are defined in the hardware, software, and security configuration guides for each integrated component. The IDPA integrated appliance configuration manager interface enforces an optimal environment for the most efficient operation of the appliance internal components. Administrators can configure and tune the IDPA to improve performance levels, capacity, and availability as needed using Dell EMC's best practices configuration guides for sizing guidance & deployment.

Dell EMC ProDeployment along with ViON Professional Services will ***ensure best practice guidelines and recommended configurations are adhered to as part of the implementation*** and deployment of the IDPA. This will include subsequent data migration and consolidation of existing backup data and workloads being migrated to IDPA and replicated to DR sites.

4.2.1.2.3 The solution should include capabilities designed to provide enhanced cybersecurity protection, such as protection against ransomware cyber-attacks.

Our solution supports the capability to add an additional layer of protection against ransomware cyber-attacks. This is accomplished by extending the data protection environment to include an Air-Gap Cyber Recovery Vault solution which includes an analytics layer that compensates for the gaps in real-time protection. The ***Cyber-Recovery Vault includes advanced analytics and Cyber Recovery tools (Cyber Sense)*** that look at how data changes. Each scan of the data is an observation that looks for unusual changes in files or databases. As new scans or observations occur, changes indicative of cyber-attacks are continuously monitored.

VION CYBER PROTECTION:

- ✓ Constant Observation for Behavior Indicative of Cyber Attacks
- ✓ Tools to Immediately Quarantine and Replace Corrupt Data
- ✓ Analysis of both File Content and Metadata for Corruption

Assuming that current security solutions are not 100% effective and data has been corrupted, tools such as CyberSense from Index Engines can locate, isolate & quarantine corrupt data using analytics and machine learning while providing the ability to replace the corrupt or compromised data with the last known good version (including from an air gap cyber recovery vault solution). A successful cyber-attack can be discovered, and the files replaced quickly with minimal business interruption.

Where most cybersecurity tools look at metadata, ours also focuses on the content. Some ransomware corrupts inside files or databases, and if only the metadata is monitored then this attack will not be detected. The following are some of the attack vector categories: encryption of files or pages in a database, corruption of key data structures, or mass deletion/creation of data. Over 40 different statistics are utilized which look for changes in data that are representative of these types of attacks.

4.2.1.2.4 The solution should include capabilities designed to enable cost efficiencies in data storage requirements.

The IDPA DP8300 supports the largest application ecosystem and features an average deduplication rate of 55:1. With typical deduplication and native Cloud Tier for long-term retention, the IDPA DP8300 can protect up to 108 PB of logical data.

The IDPA DP8300 will ensure customers achieve lowest cost-to-protect and is protected by Dell-EMC's Future-Proof Loyalty program which will span across aaS models to customers.

This program essentially ensures Data Protection Deduplication rates up to 55:1 with a 3-year satisfaction policy that provides predictable costs related to support and hardware maintenance as well. This includes a Cloud-Enabled Infrastructure, Cloud Mobility, Data Protection Services and Management at no additional cost (included with the purchase of ProSupport maintenance that is part of the aaS offering).

The IDPA DP8300 will seamlessly integrate into customers' existing legacy infrastructures with the need to be content aware. The DP8300 is also application agnostic and can deduplicate data across application silo's and physical locations to protect the entire organization on a consolidated platform.

The IDPA DP8300 has inherent design features such as in-line variable length source side deduplication which will not only reduce network bandwidth requirements by as much as 98% but will also drastically reduce overall backup times and storage requirements on the DP8300. This technology also applies to backup data that is transmitted or replicated site to site (from one IDPA to another) but also to the cloud, whether on-prem or in a public cloud provider.

4.2.1.2.5 Transition Timeline:

The vendor should be capable of implementing a transition from the existing enterprise data backup to the Vendor's solutions within sixty (60) days of the contract award.

ViON understands and acknowledges implementing a transition from the existing enterprise data backup solution to our solution will be within 60 days of the contract award. We have already worked with WVOT for the existing enterprise data backup solution, which will make implementing the new solution the smoothest possible transition as the solutions are the same from Dell Technologies.

The existing legacy data protection systems are Dell-EMC (primarily) which consist of Avamar, Data Domain and an IDPA DP8300 located at the current primary data center (deemed to be the new DR location).

The fact that the existing data protection environment consists mainly of technology from the same vendor will have a significant impact on the overall level of effort required to successfully implement the new data protection solution. This also will have very significant impacts on overall integration, migration, training, management, and transition to the new design.

Migration of workloads from the existing data protection systems over to the new IDPA DP8300 will require much less effort than migrating to a different data protection system. One that would require full rehydration (restore) of all existing backups in order to back up the data again to conform with the new solutions data format. This process would not be required with the IDPA DP8300 – any data that currently resides on the legacy Avamar, Data Domain or IDPA systems can be easily migrated over to the new IDPA DP8300 with NO rehydration required.

This means that only a minimal amount of data from other data protection systems would need to be migrated over to the new IDPA DP8300 – and this also means that minimal effort would be required reconfiguring existing clients, hosts, applications and VMware environments with the new IDPA DP8300.

Again, this is because the system already will have compatible backup agents, plug-ins and clients that can easily be re-registered with the new IDPA DP8300. All of these factors will have significant impacts on the overall time and effort required to implement the new IDPA DP8300 into the existing environment.

4.2.1.2.6 Transition Plan:

A transition plan should be provided to the State for approval that outlines the transition from the existing enterprise backup to the Vendor's solution. This should be accomplished within thirty (30) days of contract award.

ViON agrees, understands, and accepts the State's requirement to provide a transition plan for the State's approval outlining the transition from the existing enterprise backup to ViON's solutions. ***This will be accomplished within 30 days of contract award.***

4.2.1.2.7 Managed Services Scope:

The enterprise data backup scope is NOT limited to the data located on infrastructure provided under this contract. The State seeks to leverage this component of the contract to backup data in both the provided infrastructure and existing, state-owned, on-premise infrastructure requiring data backup. The solution should include the following:

Physical Layer: Services and support of the physical layer of the Enterprise Data Backup & Protection Service.

Firmware Layer: Services and support of the firmware layer of the Enterprise Data Backup & Protection Service.

Application Layer: License(s), services, and support for installation, configuration, documentation, training, and operational hand-off to the State of an enterprise-class data backup capability.

ViON will deliver onsite and, as allowed, remote Managed Services to support the ViON Enterprise Data Backup & Protection Service, including data not located under infrastructure provided under this contract including existing, state-owned, on-premise infrastructure requiring data backup. ViON's managed services will leverage IDPA's native HTML5 Web Interface for secure remote management and administration of the DP8300. There are two separate remote management tools used to manage and administer the DP8300, the Appliance Configuration Manager (ACM) and the IDPA System Manager console.

The ACM Dashboard is utilized for remote administration and management of the IDPA DP8300 appliance itself. This includes a single pane of glass centralized console for all tasks and operations required to manage and access the IDPA System Manager, Protection Storage, Backup Server, Reporting and Analytics, Advanced Search portal, Cloud Disaster Recovery Console, vCenter or Virtualization environment, Customer Information and General Settings for the IDPA.

The second primary remote management tool – the IDPA System Manager console, is also a modernized HTML5 Web-Interface which is used to manage and administer the backup and restore operations of the DP8300.ViON's Enterprise Data Backup & Protection Service solution will include a:

- Physical Layer and accompanying services and support

- Firmware Layer and accompanying services and support
- Application Layer and licenses, services, and support for the installation, configuration, documentation, training, and operational hand-off to the State of an enterprise-class data backup capability

ViON's Managed Services will deliver operations and maintenance services including:

- Operating system security patches
- Operating system upgrades (minor releases only)
- Hardware firmware upgrades
- License support services
- Configuration support
- Application system documentation
- On-the-job Training
- Operational hand-off to WVOT and
- Addressing any identified security vulnerabilities

We will monitor and provide firmware patches, upgrades, and firmware updates for the IDPA solution at regularly scheduled intervals. Updates that impact security vulnerabilities will be monitored and applied on an ongoing basis.

ViON will perform initial tests for all updates, changes, and upgrades to validate the process and ensure the updates or changes do not negatively impact the operation of the IDPA system. Our team will then coordinate any updates with the State before implementing patches and updates to the solution. Updates will be performed remotely, when/if permitted by State protocols, and onsite, for updates that require physical presence or to comply with State security requirements.

For onsite maintenance, ViON will coordinate physical access in compliance with the State's physical access protocols.

As WVOT becomes more familiar with the capabilities and operational management of the IDPA through documentation and on the job training, our team will work with WVOT to facilitate operational hand-off of the solution from ViON to WVOT.

4.2.1.2.8 Enterprise Data Backup Proposal.

Vendor should provide documentation outlining how their solution helps the State achieve the goals and objectives outlined in this RFP for enterprise data backup. In addition, the documentation should specifically seek to address the following:

ViON provides documentation outlining how our Enterprise Data Backup solution helps the State achieve the goals and objectives outlined in the RFP solicitation in the following sections. The following table maps to the specific goals and objectives identified by the state in this solicitation.

Requirement Section	Requirement	Paragraph Reference	Meets Requirement
4.2.1.2.1	Vendor's proposed solution should include applicable, supported hardware, software, middleware, technical dependencies, and managed services (as scoped) to enable an enterprise data backup capability.	Page 25	YES
4.2.1.2.2	The solution should be capable of providing industry best practices in enterprise data backup capabilities.	Page 26	YES
4.2.1.2.3	The solution should include capabilities designed to provide enhanced cybersecurity protection, such as protection against ransomware cyber-attacks.	Page 26	YES
4.2.1.2.4	The solution should include capabilities designed to enable cost efficiencies in data storage requirements.	Page 26	YES
4.2.1.2.5	The vendor should be capable of implementing a transition from the existing enterprise data backup to the Vendor's solutions within sixty (60) days of the contract award.	Page 27	YES
4.2.1.2.6	A transition plan should be provided to the State for approval that outlines the transition from the existing enterprise backup to the Vendor's solution. This should be accomplished within thirty (30) days of contract award	Page 27	YES
4.2.1.2.7	The enterprise data backup scope is NOT limited to the data located on infrastructure provided under this contract. The State seeks to leverage this component of the contract to backup data in both the provided infrastructure and existing, state-owned, on-premise infrastructure requiring data backup. The solution should include the following: Physical Layer: Services and support of the physical layer of the Enterprise Data Backup & Protection Service. Firmware Layer: Services and support of the firmware layer of the Enterprise Data Backup & Protection Service.	Page 28	YES

Requirement Section	Requirement	Paragraph Reference	Meets Requirement
	Application Layer: License(s), services, and support for installation, configuration, documentation, training, and operational hand-off to the State of an enterprise-class data backup capability.		

Figure 9: How ViON Meets WVOT Goals and Objectives

The Dell EMC Integrated Data Protection Appliance (IDPA) DP8300 is a fully integrated and comprehensive solution that provides all data protection features and functionality needed to accommodate and protect small to mid-size organizations.

Modern data center transformations are taxing organizations critical resources, especially small to mid-sized organizations. The goal is to achieve the data center transformation but at the same time reduce overall cost and resource requirements.

Simple

- **Turnkey:** Offers complete backup, deduplication, replication, recovery—plus, cloud readiness with disaster recovery and long-term retention to the cloud
- **Management:** Includes easy-to-use HTML 5-based System Manager UI that automates daily management, monitoring and reporting tasks; offers integration with popular native management tools so that admins can continue to use familiar UIs
- **Easily grow to the cloud:** starts with 192 TB usable capacity and scales up to 720 TB usable capacity. With typical deduplication and cloud tiering, the logical capacity can increase significantly – all the way up to 108 PB

Powerful

- **Comprehensive coverage:** combines protection storage and software, search, and analytics for enterprise-class protection across the largest application ecosystem
- **VMware-optimized:** With its leading VMware integration, the IDPA empowers vAdmins to perform most common backup and recovery tasks directly from the native vSphere UI. With automation across the entire VMware data protection stack (VM deployment, deployment of proxies and movement of data to protection storage), the IDPA makes it easy and cost-effective to scale up to more VMs. And, it provides faster backups and recoveries, more efficient networking and capacity with its leading deduplication and bandwidth utilization
- **High performance:** 55:1 avg dedupe, less bandwidth required than competitors; flash-enabled for faster performance and instant recoverability; instantly access up to 32 VMs with up to 40,000 IOPS
- **Efficient cloud:** Extends data protection seamlessly to private and public clouds; includes Cloud Tier for long-term retention to cloud and Cloud Disaster Recovery with full orchestration as add-ons

Cloud Extensibility

IDPAs are designed to extend to the Cloud with no additional hardware required. IDPAs support:

- Cloud-Tier for long-term retention to the Cloud (Public, Private or Hybrid Clouds), expanding its usable capacity 2x in the cloud with Cloud Tier. A free cloud space-estimator tool estimates amount of cloud storage space used if backups are moved to cloud for long term retention. Efficient capacity management between on premise and cloud helps reduce storage costs
- Native cloud disaster recovery to Amazon Web Services, VMware Cloud on AWS or Microsoft Azure
- Two powerful options that can be used individually or together to extend protection to the cloud

4.2.1.2.8.1 The Vendor ' s ability to quickly transition from the existing solution to their proposed solution.

The existing IDPA at WVOT will be leveraged as the target DR data protection silo counterpart to a newly deployed IDPA which will reside at the new designated customer data center.

Because the systems are already compatible and designed to integrate with each other, implementation and deployment time and the required level of effort will be much less than deploying a new or indifferent solution.

The IDPA is already a turn-key integrated solution which significantly reduces deployment and installation costs and time, and in consideration of the fact that the existing ViON IDPA located at the customers designated DR location will make the overall installation, deployment and subsequent integration of the two IDPA's much faster. This will also facilitate a smoother and faster transition and migration process – replication can easily be setup between the two systems to ensure rapid migration of existing data workloads to the new IDPA.

4.2.1.2.8.2 How the Vendor's solution provides industry best practices in data protection.

ViON's proposed IDPA integrated appliance configuration manager interface will allow administrators the ability to configure the system for optimal performance and operation of all appliance integrated components.

Administrators will be able to configure and tune the IDPA to improve performance levels, capacity and availability using Dell EMCs best practices configuration guides for sizing guidance, installation, and deployment. Dell EMC ProDeployment along with ViON Professional Services will ensure best practice guidelines and recommended configurations are adhered to as part of the implementation and deployment of the IDPA. This will include subsequent data migration and consolidation of existing backup data and workloads being migrated to IDPA and replicated to DR sites.

4.2.1.2.8.3 How the Vendor' s solution provides cost-effective data backup enabling an adherence to compliance requirements.

The IDPA DP8300 eliminates silos with a single appliance for complete data protection while providing data protection across the largest application ecosystem (including modern

applications like MySQL and MongoDB)—physical, virtual, and cloud—and supports multiple hypervisors (vSphere and Hyper-V) and is VMware optimized.

It offers secure and compliant integration with VMware, SQL, and Oracle native management tools so that admins can continue to use familiar UIs.

IDPA DP8300 Key Features:

- Streamlines deployment with factory-integrated protection storage and software
- Provides up to 108 PB logical capacity (with deduplication and Cloud Tier option) and up to 41 TB/hour throughput
- Instantly access up to 32 VMs with up to 40K IOPS
- Cloud capabilities available for disaster recovery and long-term retention to the cloud
- Lower total cost-to-protect with 55:1 deduplication ratio on average
- Instant Access enables quick access to VMware VMs backed up on the appliance
- Secure and reliable with encryption, fault detection, and self-healing

Recent Updates Include:

- Expanded Cloud Ecosystem and More Efficient Cloud Capacity Management:
- Cloud DR - New Azure support, native integration across all IDPAs
- Cloud Tier for long-term retention - Now supports Google Cloud Platform and Alibaba Cloud
- Space Estimator Tool for Cloud Tier - Free tool estimates amount of space that will be made available in the on-prem IDPA if data is moved to Cloud Tier for long-term retention
- Enhanced Performance:
    - Instantly access up to 32 VMs with up to 40,000 IOPS—up to a 4X increase in IOPS
    - Faster restores from an IDPA to production storage than before
    - Increased Usability and Efficiency:
    - Usability - updated HTML 5 UI, improved upgrade times
    - Efficiency - Networking enhancements, increased space for system functions, bypass of IDPA DP Search and DPA, support for secure LDAP

4.2.1.2.8.4 How the Vendor's solution provides flexible capability enabling cost optimization.

ViON's proposed IDPA simplifies deployment and management, while delivering powerful, enterprise-data protection capabilities for enterprise organizations at a lower cost-to-protect than competing solutions.

It is a converged solution that offers complete backup, replication, recovery, deduplication, instant access and restore, search & analytics, tight VMware integration—plus, cloud readiness

with disaster recovery and long-term retention to the cloud—all in a single appliance—for 10X faster deployment than traditional solutions. IDPA Eliminate silos with a single appliance for complete data protection.

The IDPA provides protection across the largest application ecosystem (including modern applications like MySQL and MongoDB)—physical, virtual, and cloud—and supports multiple hypervisors (vSphere and Hyper-V) and is VMware optimized. It offers integration with VMware, SQL, and Oracle native management tools so that admins can continue to use familiar UIs.

Lower Total Cost of Ownership (TCO)

- Industry leading 55:1 average deduplication rate
- Average cost is less than half a cent per Gb/month
- Lower TCO than leading integrated appliance competitors

Based on a recent ESG whitepaper from Dell EMC, "The Economic Value of Data Domain and Integrated Data Protection Appliances (IDPA), June 2018. Result are based on audits and analysis of call-home support data from 12 active Dell EMC customers."

4.2.1.3 Infrastructure Operations Monitoring

The State seeks an infrastructure operation monitoring solution for this contract. The following specifications outline the goals and services for infrastructure operations monitoring:

ViON is proposing ScienceLogic SL1 as the operation monitoring platform solution to support WVOT. ***ScienceLogic SL1 provides a more agile, flexible, and efficient monitoring and automation capability through a single multi-technology service assurance and the Artificial Intelligence for IT Operations (AIOps) platform.***

The platform is easy to deploy and maintain so the state and support resources can quickly respond to technology changes and business needs.

According to the released Q&A, WVOT is seeking to monitor over 1,800 total components. The SL1 solution is more than sufficient to provide comprehensive monitoring and preventative analytics. SL1 is also open and flexible, so staff can manage IT infrastructure, today and in the future, from a single unified system – no matter what it is or where it exists – in the data center or in the cloud. Additionally, the SL1 platform enables the team to spend less time administering tools and more time on the important innovation projects that consistently deliver high-quality services faster and at lower cost.

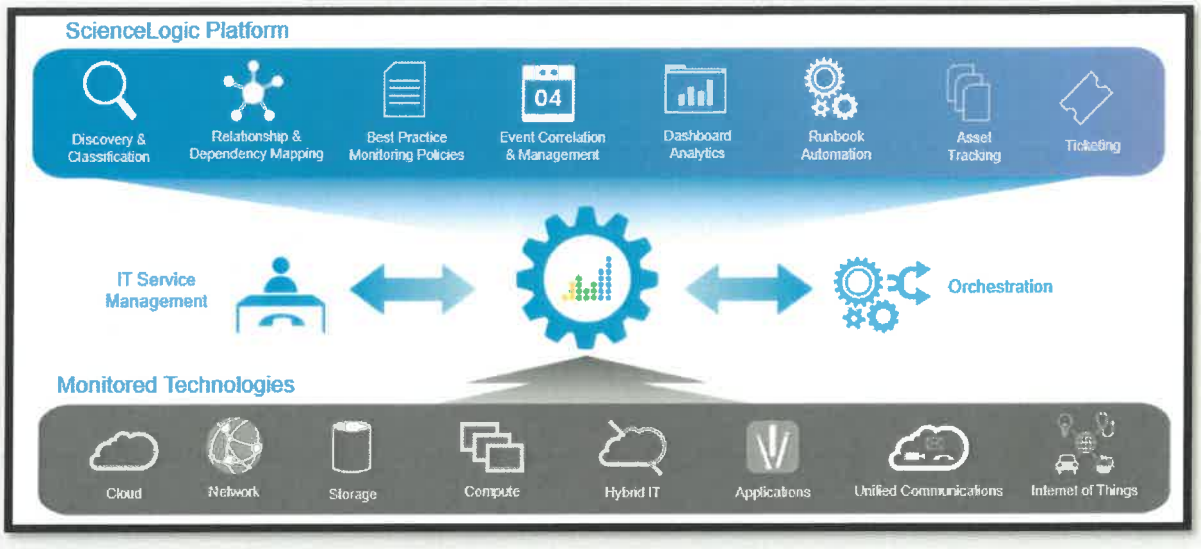


Figure 10: ScienceLogic Platform

ScienceLogic provides significant differences to other tools through:

- A single unified platform and simple licensing model for cross-domain visibility
- Agentless appliance with pre-configured software packages/monitoring policies
- Low cost of ownership
- Easy to deploy & maintain, fast time to value, low admin overhead
- Future-proof and extensible via open API and agentless integration techniques
- Built-in automation
- Discover, map, events, runbook, ticketing, assets
- Role-based visibility, secure data, views, and actions for multiple stakeholders

4.2.1.3.1 Vendor's proposed solution should provide supported hardware, software, middleware, technical dependencies, and/or managed services (where applicable) to enable network and system monitoring that is accessible to both the State and the Vendor.

The ScienceLogic SL1 solution proposed by ViON consists of all supported hardware, software, middleware, technical dependencies, and/or managed services (where applicable) to enable network and system monitoring that is accessible to both the State and the ViON. It is a comprehensive, single code base, appliance-based solution. The platform appliances are complete with embedded operating system, database(s), and application accessed via a single web-based portal/GUI. The architecture supports a multi-site deployment of appliances for flexibility and scalability (all connected as a single system) while maintaining a single platform approach for centralized use, administration, and patching. All of these features are part of a multi-tenant model to support many departments or organizational stakeholders.

4.2.1.3.2 Vendor's system should have the ability to monitor any system (including but not limited to physical servers, virtual servers, storage arrays, databases) and/or any network equipment (including but not limited to switches, routers, etc.).

ScienceLogic's SL1 solution provides an out-of-box capability to discover, model, and monitor nearly all makes and models of compute, network, storage, virtualization, unified communications, operating systems, databases, and related infrastructure elements such as power and security subsystems.

SL1 has the ability to monitor any system (including but not limited to physical servers, virtual servers, storage arrays, databases) and/or any network equipment (including but not limited to switches, routers, etc.)

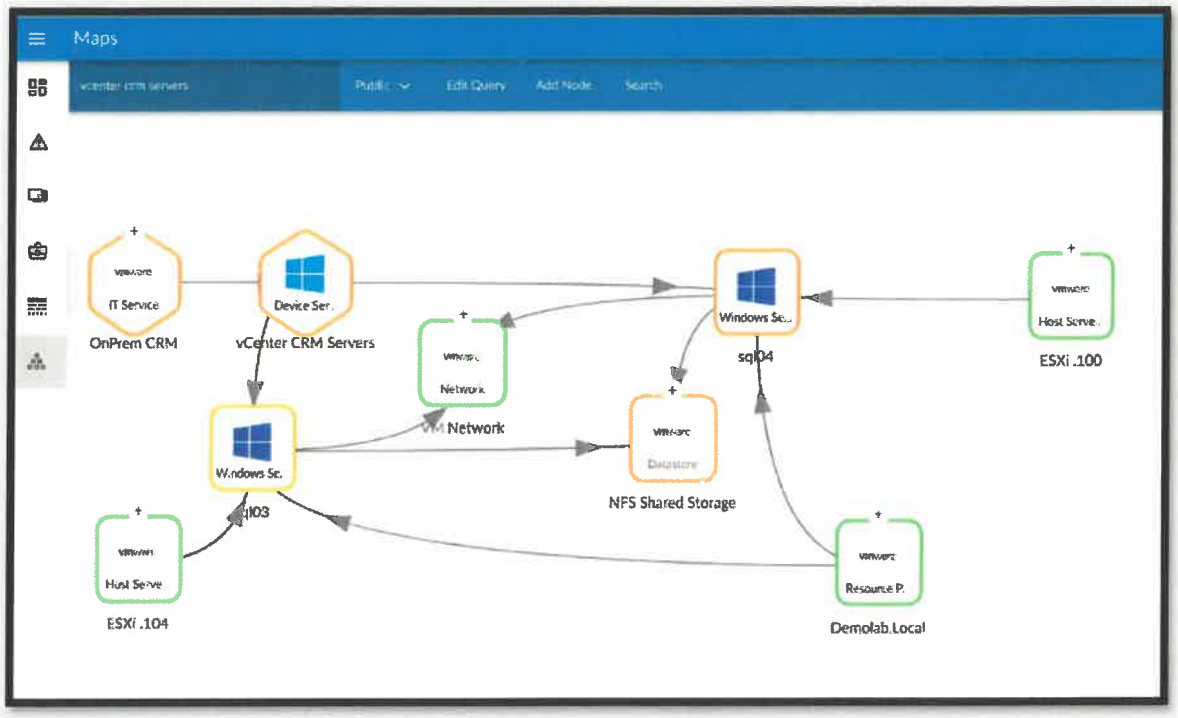


Figure 11: ScienceLogic's Monitoring Capability

The ability to monitor infrastructure hardware and software through the use of a variety of protocols provides agentless discovery and monitoring. Over 1700 templates support thousands of systems. ***ScienceLogic's SL1 platform offers unique and comprehensive coverage for data centers and cloud environments as a single platform that***:

- Discovers all elements within the infrastructure across the entire IT stack (power, network, storage, servers, applications, and public cloud)
- Applies the correct monitoring policy using one of over 1700 PowerApps
- Detects, maps, and alerts on cross-technology and cross-cloud dependencies
- Populates built-in dashboards showing overall service levels and allowing staff to drill into service metrics and elements for granular details

- Alerts when network, storage, server, application, cloud service, or power issues are detected

4.2.1.3.3 The monitoring system should be able to create and respond to alerts by notification of appropriate persons via Email, SMS, or other such means when set thresholds are exceeded. The system should also be able to do basic remediation (e.g. restart services based on triggers).

The ScienceLogic SL1 platform continuously monitors devices for Key Performance Indicators (KPIs).

When thresholds are exceeded it creates alerts, which are immediately visible in an event console. Automation provides the ability to send events (based on policies) defined as alerts and notifications in email, text, SMS, Slack, etc. The system can also do basic remediation (e.g. restart services based on triggers).

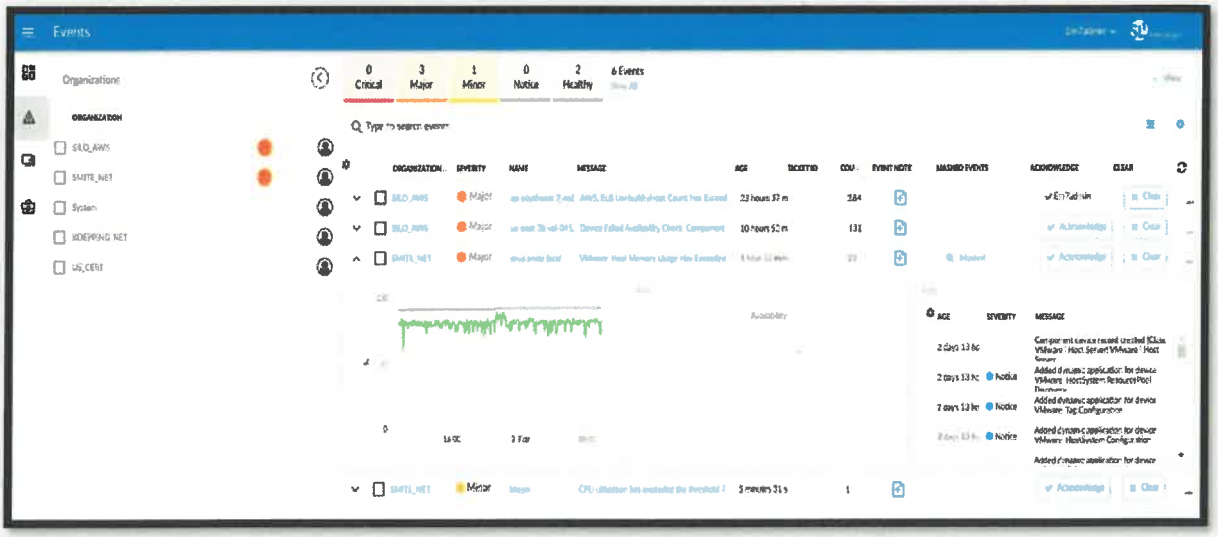
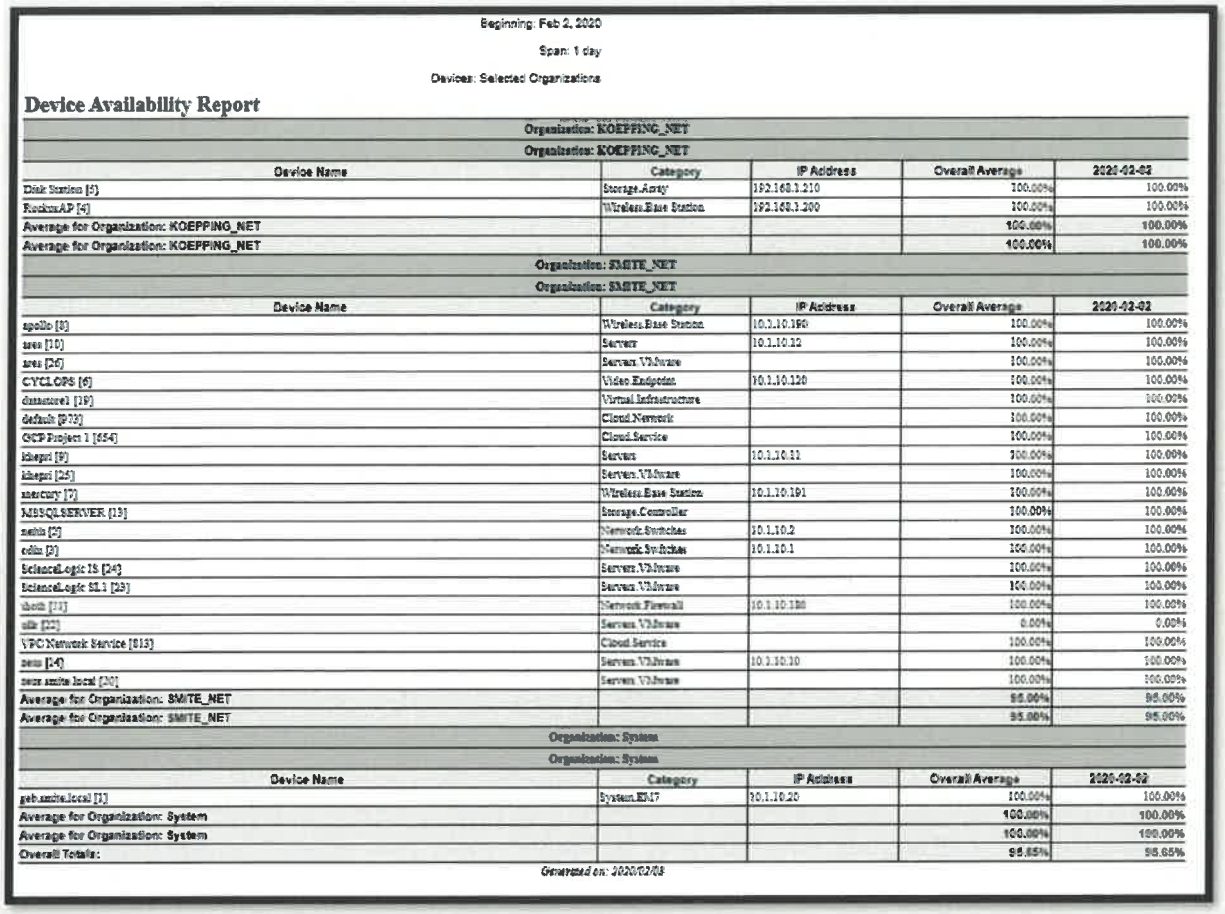


Figure 12: SL1 Key Performance Indicators

Additionally, the same event-based triggers can extend into automations such as service restarting, launching of scripts, or other means of initiating remediations and/or event enrichment through additional information (i.e. running commands and adding to the event or associated tickets.)

4.2.1.3.4 System should also be able to produce automated reports on a set schedule or on demand about all nodes that are under monitoring. These reports should indicate the health of the system(s).

The ScienceLogic SL1 platform comes populated with nearly 100 reports out-of-the-box and can be extended through plug-ins to integrate with other reporting platforms or ITSM tools. Reports can be automated, customized, scheduled or on demand, and reports can also be created for specific format or content to provide the health of the system.



Beginning: Feb 2, 2020

Span: 1 day

Devices: Selected Organizations

Device Availability Report

Organization: KOEPPING_NET				
Organization: KOEPPING_NET				
Device Name	**Category**	**IP Address**	**Overall Average**	**2020-02-02**
Disk Station [5]	Storage.Array	192.168.3.210	100.00%	100.00%
RockmAP [4]	Wireless.Base Station	192.168.3.200	100.00%	100.00%
Average for Organization: KOEPPING_NET			**100.00%**	**100.00%**
Average for Organization: KOEPPING_NET			**100.00%**	**100.00%**
Organization: SMITE_NET				
Organization: SMITE_NET				
Device Name	**Category**	**IP Address**	**Overall Average**	**2020-02-02**
apollo [8]	Wireless.Base Station	10.1.10.160	100.00%	100.00%
ares [10]	Server	10.1.10.12	100.00%	100.00%
ares [26]	Server.VMware		100.00%	100.00%
CYCLOPS [6]	Video Endpoint	10.1.10.120	100.00%	100.00%
datastore1 [19]	Virtual Infrastructure		100.00%	100.00%
default [272]	Cloud.Network		100.00%	100.00%
GCP Project 1 [654]	Cloud.Service		100.00%	100.00%
khepri [9]	Server	10.1.10.11	100.00%	100.00%
khepri [25]	Server.VMware		100.00%	100.00%
mercury [7]	Wireless.Base Station	10.1.10.191	100.00%	100.00%
MSSQLSERVER [13]	Storage.Controller		100.00%	100.00%
neith [2]	Network.Switches	10.1.10.2	100.00%	100.00%
odin [3]	Network.Switches	10.1.10.1	100.00%	100.00%
ScienceLogic IS [24]	Server.VMware		100.00%	100.00%
ScienceLogic SL1 [23]	Server.VMware		100.00%	100.00%
thoth [21]	Network.Firewall	10.1.10.126	100.00%	100.00%
zeke [22]	Server.VMware		0.00%	0.00%
VPC Network Service [813]	Cloud.Service		100.00%	100.00%
zeus [14]	Server.VMware	10.1.10.10	100.00%	100.00%
zeus.smite.local [30]	Server.VMware		100.00%	100.00%
Average for Organization: SMITE_NET			**95.00%**	**95.00%**
Average for Organization: SMITE_NET			**95.00%**	**95.00%**
Organization: System				
Organization: System				
Device Name	**Category**	**IP Address**	**Overall Average**	**2020-02-02**
geb.smite.local [1]	System.EM7	10.1.10.20	100.00%	100.00%
Average for Organization: System			**100.00%**	**100.00%**
Average for Organization: System			**100.00%**	**100.00%**
Overall Totals:			**98.65%**	**98.65%**

Generated on: 2020/02/03

Figure 13: Device Availability Report

The reports cover a wide variety of details, many of which reflect the overall health, recent events, availability, or capacity of resources. Any of these reports can be automated and can be delivered via email based on a schedule.

4.2.1.3.5 Vendor should explain how their proposed monitoring service is both cost effective and uses the least amount of system resources to provide monitoring and supporting the infrastructure.

The ViON team proposes the use the of ScienceLogic SL1 platform specifically due to its comprehensive capability to monitor multiple technologies, ability to automate routine tasks, architecture, and ease of implementation.

The overall result of leveraging the SL1 platform is a reduction of multiple tools and complexities, minimal training for use and administration of the platform, and quick time to value. Typically, the platform can be installed with discovery of devices and real-time monitoring in place in hours. As the platform is appliance-based, appliances can be deployed on physical hardware, as virtual machines, and/or cloud instances in minutes without the need for establishing an OS image, database, or other dependent components. This also reduces the time and complexity of maintaining those resources independent of the application.

4.2.1.3.6 Managed Services Scope:

The infrastructure operations monitoring scope is NOT limited to the infrastructure provided under the contract. The State seeks to leverage this component of the contract operationally monitoring both the provided infrastructure as part of this contract and for existing, state- owned, on-premise infrastructure, where needed. The solution should include the following:

Physical Layer: services and support of the physical layer of the infrastructure operations monitoring.

Firmware Layer: services and support of the firmware layer of the Infrastructure Monitoring & Management Service.

Application Layer: license(s), services, and support to install, configure, document, training, and operational hand-off to the State of an enterprise-class infrastructure monitoring tool.

ViON's Managed Services teams will deliver remote infrastructure monitoring services for the State inclusive of the physical, firmware, and application layers.

Supported by our 24x7x365 Support Center, ViON will deliver proactive, near-real time monitoring and alerts to minimize outages and downtime for the State's environment.

Our managed services personnel will leverage our close partnership with Dell Technologies and product alerts to notify us of firmware and physical updates for the OEM technologies. Additionally, using the ScienceLogic SL1 platform, ViON's managed services teams will be able to monitor firmware, physical, and application layers for missing updates, out of compliant settings, and proactively identify potential issues using the AIOps capabilities of the SL1 platform described earlier in section 4.2.1.3.

Monitoring the physical layer requires a holistic view to proactively diagnose performance and availability characteristics across the entire infrastructure before an outage occurs. Outages or even slowdowns can hinder the customer experience and potentially cost the State financially. Our Managed Services team, combined with our ScienceLogic solution, will monitor for mutually established KPIs and SLAs to minimize unplanned downtime, network intrusion, and resource saturation for WVOT IT.

Monitoring the firmware layer requires alert notifications from OEM regarding patch and security updates for their products and ensuring the latest firmware updates are provided in a timely fashion for the State's environment. ViON will monitor these updates and communicate with the State when application of firmware updates or security patches are required. Updates will be performed remotely, when/if permitted by State protocols, and onsite, for updates that require physical presence or to comply with State security requirements. For onsite maintenance, ViON will coordinate physical access in compliance with the State's physical access protocols.

ViON will monitor the application layer to improve application availability for the State's constituents and stakeholders. ViON's managed services teams, along with our solution from ScienceLogic, will deliver monitoring capabilities fusing data between applications and infrastructure, establishing relationships and business context for identifying root cause and service impact.

WVOT will gain full-stack visibility, see the impact of infrastructure on applications, improve cross-team collaboration and improve customer experience.

As mandated, we will provide the license(s), services, and support to install, configure, document, provide training, and conduct an operational hand-off to the State of our enterprise-class infrastructure monitoring tool.

Additionally, ViON can monitor the State's network delivering actionable insights across the State's entire network infrastructure—***WAN, LAN, SDN, routers, switches, firewalls, and more. We can monitor availability, performance, configuration, utilization, and capacity for any network technology and any vendor***. Additional features include:

- Access detailed network visibility, combined with application, system, and OS usage monitoring
- View dependencies between technology components of key business services
- Use visual dashboards providing insight to operations teams, customers, and stakeholders
- Enrich fault prevention and capacity planning with highly granular events and alerts, integrated with our ticketing module or external ticketing systems
- Get real-time reporting on device-level and service-level performance and availability.
- Use rapid, automated network discovery for complete asset inventory
- View an inventory of the State's entire network by reviewing all interfaces on each network device, with IP and MAC addresses and interface speeds
- A topology map of connected devices and gathers performance statistics about each interface
- Comprehensive trend reporting of usage and metrics provides real-time insight that keeps you in total control of the network, end-to-end
- Monitor network interface utilization, latency, errors, discards, and dozens of other metrics

Finally, ViON can deliver monitoring of Compute/OS for the State using out-of-the-box or customized monitoring policies.

View key event and performance metrics on custom dashboards. View health and tickets associated with events and performance. Leverage asset and hardware configuration monitoring. Use virtualization monitoring for VMware, Citrix XenServer, Microsoft Hyper-V, and more. Supported OS vendors include Linux, HP-UX, Microsoft Windows, Oracle Solaris and SunOS, IBM AIX and z/OS, Apple Mac OS X, Novell Netware, and SCO OpenServer and SCO Unix. In addition, our monitoring solution can deliver advanced management of virtualized and cloud-based environments using direct API connections and capabilities.

4.2.1.3.7 Infrastructure Operations Monitoring: Vendor should provide documentation outlining how their solution helps the State achieve the goals and objectives outlined in this RFP for infrastructure operations monitoring. In addition, the documentation should specifically seek to address the following:

The ScienceLogic SL1 platform and AIOPs enables WVOT to:

- ***Visualize*** all operational monitoring data in one place

- ***Contextualize*** the State's environment by applying AI/ML for actionable insights
- ***Act*** by integrating the State's IT ecosystem and sharing data in real-time

4.2.1.3.7.1 How the Vendor's solution provides industry best practices in infrastructure management.

The ScienceLogic SL1 platform adheres to industry best practices and gives customers like WVOT:

- Business service dashboards that show customers how their managed services are doing
- Dependency mapping to identify real-time linkages between applications and their underlying infrastructure
- Multi-tenancy from the ground up — with secure data partitioning between users
- Carrier-class scalability
- Comprehensive monitoring for networks, systems, servers, storage, cloud – and applications
- Advanced automation and machine learning to streamline workflows and reduce cost

Additionally, the ScienceLogic SL1 market leading platform employs several patents in the discovery and monitoring functions of the platform to automatically align device 'templates' often unique to specific make/model devices.

This capability delivers a comprehensive monitoring for both performance and configuration elements with pre-established (yet configurable) data requests from devices monitored as well as associated thresholds often co-developed with industry manufacturers.

This results in auto-alignment of data requests, presentations, alerts, and events based on best practices both from the specific device manufacturers and/or industry experience and customer feedback. While this is an out of the box function of the platform both the frequency of specific data collected as well as the thresholds established are configurable by the customer at global, groups, or individual devices levels. These capabilities help WVOT by delivering industry best practices for monitoring and integration.

4.2.1.3.7.2 How the Vendor's solution has been scoped and balanced to provide critical capabilities of infrastructure management, while considering cost control.

ScienceLogic's largest market segment is the Managed Service Provider space where cost controls are essential to business. The proposed SL1 platform was specifically designed and scoped to be balanced by providing critical capabilities of infrastructure management while also considering cost control. Throughout the history of the company and platform the development of functions and features have had costs and efficiencies as core guiding principles. The SL1 platform is designed to:

- **Monitor the widest variety of devices** in a single platform supporting network, compute, storage, application, IoT, SaaS, and cloud technologies in a single, non-modular, platform to reduce the footprint, resource consumption, training, and administrative burdens of traditionally using several desperate tools

- **Achieve rapid time to value** through an appliance-based architecture that delivers an efficient and scalable installation (no sperate install, configuration, administration, or licensing of the operating system or database(s) which support the platform)
- **Leverage auto-alignment** of best practices via 'templates' (called PowerPacks within the platform) to provide the streamlined acquisition of data with presentation, alerts/events, reporting, and visualization of monitoring data specific to each make/model of device or platform monitored. Out of the box this capability is automatic based on the only user inputs needed are device/platform addresses (or ranges) and proper credentials based on the protocol used. This significantly reduces both complexity and costs in administration
- **Provide ease of use** and administration integration to LDAP/Active Directory to streamline use account access without separate administration; providing single file upgrades/patches that deliver OS, database, application, and template upgrades and features in a single package, upload, and deployment methodology across the entire platform (each connected 'appliance')

4.2.1.3.7.3 How the Vendor's solution provides flexibility in its implementation, enabling the State to maintain visibility on critical resources, but not requiring the capability for resources where the primary business driver is cost.

The SL1 platform allows for deep and comprehensive discovery and monitoring of IT devices and technologies, enables the State to maintain visibility on critical resources, often revealing a level of detail not expected by some customers – examples include individual pools and pool members in load balancers, individual radios within wireless access points, LUNs within volumes on storage arrays, etc. In some cases that level of depth is not needed or desired. Additionally, in today's modern virtualization and cloud platforms it may be the case that resources support development or test environments while discovered as part of the whole platform may not want to be monitored and consume a license or system resources. ScienceLogic provides mechanisms to not discover devices entirely, or in situations where devices are discovered as part of a shared technology (i.e. cloud), customer can selectively disable monitoring on specific elements of data or devices to conserve system resources and/or licenses – keeping visibility on key resources while reducing costs by filtering out non-critical resources based on operational needs – thereby not requiring the State to utilize the capability for resources where the primary business driver is cost.

4.2.1.4 On-Demand Professional Services.

Vendor should be capable of providing technical professional services, on an as needed basis.

ViON's experienced professional services team is capable of delivering as-needed technical and engineering services in support of the State's requirements. In addition to our experienced engineers, ViON maintains a wide network of partners who are able to deliver any services beyond the capability of ViON's professional services teams. Our partners include Dell Technologies and Science Logic, among many others. Services can be provided for short, medium, and long-term engagements. ViON will work with State to determine the required or desired skills, scope, and requirements on an as needed basis.

4.2.1.4.1 The State seeks to leverage a statement of work model in utilizing the on-demand professional services.

Included in ViON's response is a catalog of Service Labor Categories and functions providing the State with a variety of on-demand professional services options. These categories include architecture design, implementation, operations and maintenance, security, and field engineering professional services among many others. As stated above, ViON will work with State to determine the required skills, scope, and requirements. Once agreed upon, ***ViON will develop a Statement of Work (SOW) in coordination with the State, outlining the requirements, the scope of work, any deliverables, and price for the engagement.*** After the SOW is finalized, ViON will initiate the professional services after receipt of the State's Delivery Order that incorporates the SOW.

4.2.1.4.2 The State may leverage these on-demand professional services to perform various technology support functions related to this contract. Those functions could include, but are not limited to, staff augmentation, project work requiring specialization, server provisioning, and application migration.

ViON's proposed professional services labor categories include a wide array of capabilities and functions. These functions are available to WVOT in an on-demand format and can be delivered either onsite or remotely as required. These professional services include:

- Staff Augmentation
- Specialized Project Work
- Server Provisioning
- Application Migration
- Architecture Design
- Operations and Maintenance

ViON will work with the State to determine the requirements of each on-demand professional services engagement and provide an agreed upon SOW that will guide the services being delivered.

4.2.1.4.3 Professional Services Definitions

ViON understands, accepts, and will comply with providing the professional services as listed and described under section 4.2.1.4.3 (4.2.1.4.3.1 – 4.2.1.4.3.8).

4.2.1.4.4 On-Demand Professional Services Proposal. Vendor should provide documentation outlining how their solution helps the State achieve the goals and objectives outlined in this RFP for on-demand professional services. In addition, the documentation should specifically seek to address the following:

4.2.1.4.4.1 How the Vendor's solution enables the Statement of Work (SOW) model to identify, scope and define deliverables in the drafting of the SOW.

ViON collaborates closely with our customers to design and implement solutions that best meet their requirements. With the State, Our Program Manager will meet regularly with the State's

designed point of contact to review existing solution effectiveness, plans for future requirements, and many other topics. As plans for new requirements begin to develop, we will work with our Services Implementation Project Manager and the State in identifying the solution requirements, identifying the technology solution and its price, as well as the needed services to implement the solution. Once the technology solution is identified, **ViON's Services Implementation Project Manager will work with the State to identify the project requirements, scope and scope boundaries, timeline, deliverables, milestones, and costs** as well as any assumptions in order to develop a SOW. Once the finalized SOW is approved by the State, and after ViON has received a Delivery Order inclusive of the SOW, we will begin the service engagement.

4.2.2 Solution Support Documentation

Vendor should agree to create planning documents outlining all necessary elements of solution management that should be updated continuously during the lifetime of the contract.

ViON agrees to create planning documents outlining all necessary elements of solution management and will update these documents continuously during the term of the contract. The following ViON plan examples document the necessary elements of the solution management as required by the RFP for IaaS planning. These example plans cover multiple subsections from 4.2.2 out of the RFP. Upon award, ***each plan will be written to address the specific requirements the State outlined in the RFP and submitted according to the deliverable schedule provided in each subsection of 4.2.2 below***. This set of documents, once submitted to the customer as deliverables, will be updated continuously as needed during the contract period of performance.

4.2.2.1 Vendor's proposal should provide an example of a similar government-owned or managed implementation plan outlining key objectives, dependencies, and timeline for the initial design and implementation of the service. Vendor should, no later than 30 days post-award, submit to WVOT an implementation plan for approval.

ViON has provided in Appendix A, an example of an Implementation and Transition Plan developed and followed in support of another Government customer program, where it was extremely successful. The plan details and describes the phases and steps executed in support of the implementation of the Government service/solution. It details the objectives and expected output pertaining to each implementation phase. The phased approach provided the Government customer with a high-level schedule/timeline of the steps to be performed to successfully implement the service, addressing each of the transition requirements. ViON will provide WVOT with a similar document in support of the implementation and transition of services in support of the contract within 30 days of award.

Design and Implementation

Key Design and Implementation Objectives

1. Discovery - Develop understanding of current operating environment
    a) Facilities, power, communications, HVAC, etc.
    b) Compute infrastructure transition priorities
    c) Existing Cyber Security Policies and Procedures
    d) Staffing and interaction with existing personnel and departments

2. Reconciliation – Review, verify and validate proposed design based on review of data gathered during discovery phase
3. Knowledge Transfer – provide customer with a Uniform Discovery and Reconciliation (UDR) report for review, comment and approval of our assumptions and conclusions based on our review of the data gathered and analyzed
4. Design – Work with customer to finalize and gain approval on any design changes resultant from lead in phases

Key Design and Implementation Milestones

1. Discovery - Sites Survey and adequate receipt of technical documentation detailing current infrastructure
2. Reconciliation – determine a system baseline and then fully document the entire environment, including hardware components, software versions, capacity, and connectivity
3. Knowledge Transfer – Completion of Uniform Discovery and Reconciliation (UDR) report
4. Design – Revised designed

Key Design and Implementation Dependencies

1. Timely receipt of existing technical documentation on current data center environment
2. Timely access to facilities and customer personnel to facilitate our phased approach
3. Timely review and feedback from customer on contract deliverables
4. Timely facilities prep and readiness (Space, power, communications, HVAC) to support transition in activities

4.2.2.2 Vendor's proposal should provide an example of a guide for on-going operations outlining key objectives, dependencies, and timeline for the on-going management and maintenance of the solution. Vendor should, no later than 30 days post-award, submit to WVOT an on-going operations guide for approval.

ViON's Implementation and Transition Plan (Appendix A) includes a "Project Operation and Service Management Project Operations and Service Management" section which provided the customer with details on the day-to-day operations of the project in support of the tasks required to execute the service. This section provides details on the roles and responsibilities of the stakeholders in support of and in relation to the tasks and efforts related to the on-going service operations. It also provides information on the timeline for the tasks to be performed.

ViON will provide WVOT with a similar document in support of the implementation and transition of services in support of the contract within 30 days of award.

On-Going Operations

Key On-Going Operations Objectives

1. Ensure ViON support meets contractual SLA requirements for delivery, performance, and availability

2. Enable transparency into ViON operations and support processes
3. Enable traceability into operations and support decision making, mapping efforts to government direction
4. Ensure support efforts align with ITIL standards/best practices
5. Ensure operations and support services are provided within cost
6. Manage and mitigate risk based on Risk Management Plan
7. Monitor and control the operations and support services
8. Plan and participate in program reviews
9. Update project documentation throughout the project lifecycle as required

Key On-Going Operations Milestones

1. Weekly customer huddle meetings
2. Monthly PMR
3. Monthly CDRL deliveries

Key On-Going Operations Dependencies

1. Customer participation in meetings and reviews
2. Impacts of customer directed policies and procedures on ViON operations and support efforts

4.2.2.3 Vendor's proposal should provide an example of a solution transition and contract exit plan for another entity of similar size and scope as part of their bid response. The plan should outline key objectives, dependencies, and tasks necessary to disentangle the Vendor from the agency. An official solution transition and contract exit plan should be provided to WVOT by the end of year one (1) of the contract.

ViON's Implementation and Transition Plan (Appendix A) includes a "Contract Transition-Out" section which provided the customer with details steps to be performed to execute the Transition-Out Approach (whether to the customer or a follow-on Service Provider), asset transition/purchase approach and details, transition and deployment schedule listing all pertinent activities, interim service solution approach, transition staffing and risk mitigation, escalation procedures, status reporting, and a Transition-Out Readiness Checklist. This section provides details on the roles and responsibilities of the stakeholders in support of and in relation to the tasks and efforts related to the transition out activities.

Transition-Out Plan

Key Transition-Out Objectives

1. Minimize exit and Service Transition risks
2. Continue Service availability for the Customer
3. Provide opportunity for successful operations from the new project owner
4. Enable seamless transition from incumbent to new contract

5. Work with customer to review in-use ViON assets for buy-out or disposal
6. Perform knowledge transfer activities in accordance with contractual requirements
7. Complete all close-out contractual requirements

Key Transition-Out Milestones

1. Provide ViON in-use asset list and cost data for customer buy-out or disposal decision
2. Establish timeline for transition of customer workloads
3. Provide customer Close-Out Report and final billing
4. Maintenance/Warranty contracts established/transferred
5. Removal of ViON equipment

Key Transition-Out Dependencies

1. Customer input on buy-out or disposal decisions
2. Maintenance/Warranty disposition customer decisions
3. Administrative closing of any and all procurements, VCSP accounts removed, ViON accounts from the State of West Virginia removed, and contractual termination is complete
4. Delivery of all run books and solution artifacts to the Customer
5. Capturing Lessons Learned for the Customer
6. Customer review and acceptance of Project Close-Out Report including that all Transition-Out Tasks were successfully completed
7. Timely establishment of new contract
8. Timely transition of customer workloads

ViON shall develop and deliver a service transition and contract exit plan to WVOT for review and comment by end of the first year of the contract as per the RFP. This plan will be reviewed and updated as necessary and delivered to the WVOT customer every 2 years thereafter.

4.2.2.4 Vendor's proposal should explain how they would support the State relating to cybersecurity and privacy audits when components of the contract fall within the scope of audits. The State leverages NIST 800-53 to map all controls to a common framework.

If the State undergoes cybersecurity and/or privacy auditing, ViON can provide any necessary documentation around the provided solution and its physical components to address the security and privacy access controls in National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53. This is detailed more fully in 4.3.1.3.

As stated there, ViON works closely with customers during and after implementation to ensure proper cybersecurity requirements are met. We review the customer's Risk Management and Audit Management Plans and (where these exist) and work closely with the IT department and CISO/CSO/ISO to ensure proper cybersecurity and audit compliance.

An example of ViON's experience in supporting its customers in compliance efforts is our work performed on the **United States Patent and Trademark Office (USPTO) Storage Infrastructure Managed Service (SIMS) contract**. SIMS is required to complete annual continuous monitoring and assessment activities. The system must follow the guidance described in the NIST SP 800-37 (Rev 1), "Guide for Applying the Risk Management Framework to Federal Information Systems" and NIST SP 800-53 (Rev 4), "Security and Privacy Controls for Federal Information Systems and Organizations. ViON delivers the objective by conducting an information security program review and comprehensive assessment using artifacts that already exist where possible, structured interviews, and direct observations to benchmark the ViON information security program against the NIST SP 800-53 control set identified by the organization.

Also, of direct relevance, ViON will comply with NIST SP 800-37 standards for security life cycle approach for information security. This includes following the six-step Risk Management Framework (RMF). In so doing, ViON will ensure that the project infrastructure meets current, security and privacy requirements defined by the customer, state laws, regulations, and policies.

As required by NIST SP 800-37, **ViON will provide security to protect the confidentiality, integrity and availability of information and systems developed and maintained** on behalf of the customer, commensurate with the risk and magnitude of harm resulting from unauthorized access, use, disclosure, disruption, modification, or destruction. Additionally, ViON will update and maintain a System Assessment Package (SAP) for the storage infrastructure in accordance with guidance contained in NIST 800-37, Rev 1 or current version.

4.2.2.5 Lifecycle Model:

Vendor's proposal should submit an example of an on-premise infrastructure lifecycle management plan explaining how the Vendor's proposal will address the lifecycle stages of the on-premise infrastructure. This plan should be updated and submitted to WVOT for review and approval at least every twelve (12) months.

The following Total Lifecycle Management (TLM) figure illustrates the management processes across the management lifecycle that ViON uses in support of our customer programs for on-premise and cloud-based solutions. **We will work with WVOT to review and approve the TLM plan at least annually. ViON's IT Lifecycle Management Plan consists of all the major phases of the IT lifecycle**. Our approach consists of five major iterative phases with a sixth phase for ending service. These phases are illustrated in the figure below and include:

1. Planning and Design
2. Acquisition
3. Implementation
4. Acceptance
5. Management and Operations
6. End of Service

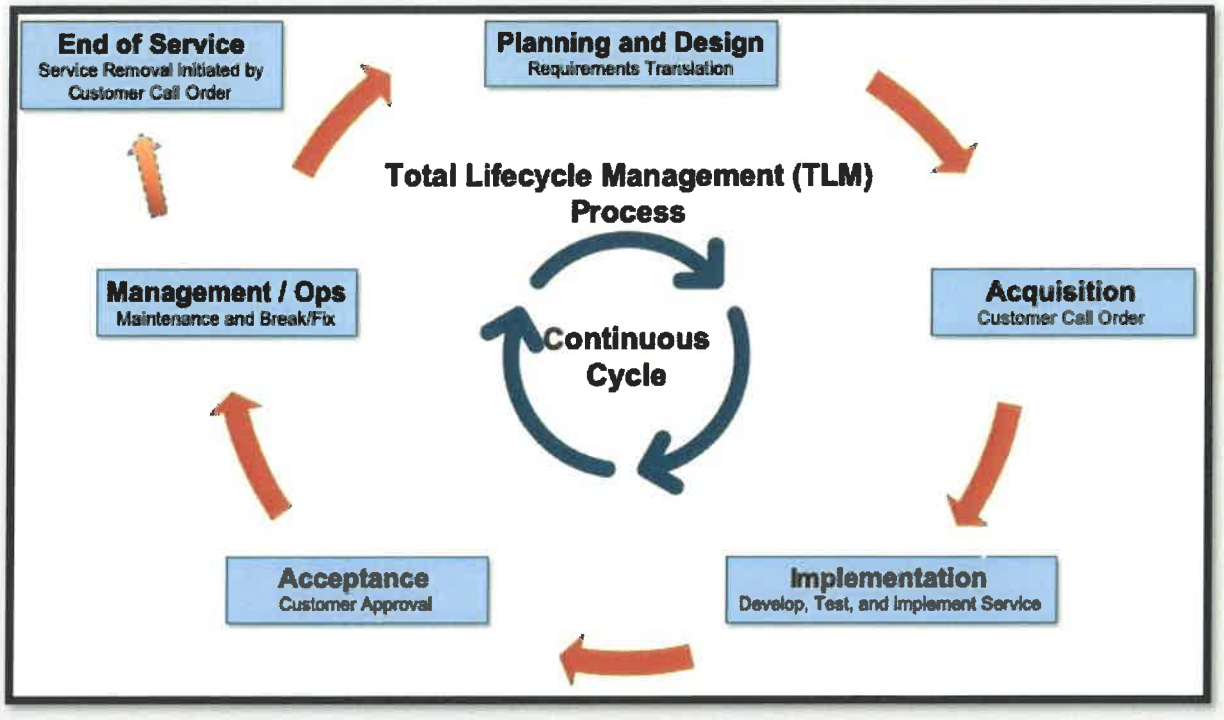


Figure 14: Total Lifecycle Management (TLM) Process

Planning and Design Phase – Within the Planning and Design Phase, ViON engineers work with the State to identify existing business challenges and related technical requirements in order to develop a technical solution. Our approach is not siloed. Rather, we consider the holistic environment including technical dependencies, impacts to disaster recovery plans, future roadmaps, and long-term objectives of the State. Our goal is to provide the most effective technical solution at the appropriate cost for the State, while minimizing vendor lock-in and maximizing existing technology investments. During the design phase, ViON may develop and provide a design plan for the State to review and approve that aligns with the State's overall IT strategic goals.

Acquisition Phase – During the Acquisition Phase, the State will initiate a Call Order using the ViON Cloud Services Platform (VCSP). This Call Order begins the acquisition process and ViON will provision the solution for the State within the defined SLAs. The Call Order process, as described in another section, allows for role-based access ensuring authorized users are able to initiative procurement activities.

Implementation Phase – With the Implementation Phase, ViON ships and delivers the solution to the customer environment. As part of this phase, we will work with the State's existing lifecycle plan such as implementing the solution in a test or development environment to validate the design plan and ensure non-disruptive operation of the solution. Once the solution is approved in each environment, we will implement the solution within the next environment until it is implemented within the State's production environment (i.e. Development, Test, Integration, and Production environments).

Acceptance Phase – As part of ViON's implementation service, we will perform all the necessary steps to deliver the solution in our "Ready for Use" (RFU) state. This process includes

racking the equipment (if necessary), installing or updating the operating system, connecting to the State's network infrastructure, performing any needed or required microcode and security updates, and updating any existing documentation. The goal in this phase is to provide a solution that's ready for the State to begin use. Once the solution is RFU, the State must accept that the solution is indeed RFU. This is what begins the billable lifecycle for the solution. If the system is not accepted by the State for whatever reason, we will make whatever updates or changes are required and the State will not be billed for the system until acceptance is provided by the State.

Management and Operations Phase – During the Management and Operations Phase, we will continue to monitor and manage the solution ensuring ongoing patches or updates are applied and performing any needed break/fix activities that might be required. All services provided here will comply with agreed upon SLAs and will adhere to the notification process prescribed by the State. ViON will further monitor the solution and alert the State should certain thresholds be breached where more compute, network, or storage may be needed. These alerts can be customized to allow adequate planning and minimize any potential outages or disruptions to the State's environment.

End of Service Phase – Within the End of Service Phase, ViON responds to the State's initiative via a Call Order to remove an item from service. Sometimes this request is a collaboration between ViON and the State, while other times may be initiated solely by the State at any time and for any reason. When a Call Order is received by ViON for ending service, we will cease billing for that system on the date the Call Order is received. we will then coordinate the removal of the system with the appropriate stakeholders for the State. Our team will provide the appropriate notification is onsite access is required. we will also comply with the State's data retention and destruction policies including removal of any storage components that retain State data and provide it to the State for appropriate analysis, retention, or destruction. ViON will remove the remainder of the system from the State's colocation facility and update any asset related documentation.

Key Total Lifecycle Management Objectives

1. Document the phased approach to managing the project
2. Ensure unity of effort
3. Maximize operational availability of IT assets
4. Provide as singular view of program data (requirements, schedule, costs, and performance)
5. Optimization of total operating costs for the IT infrastructure

Key Total Lifecycle Management Milestones

1. Identify project stakeholders and decision makers
2. Provide customer with Draft TLM for review and comment
3. Complete and distribute Final TLM to project stakeholders

Key Total Lifecycle Management Dependencies

1. Completion and customer acceptance of contractually required IaaS Service Management plans

4.2.2.6 The State desires regularly scheduled meetings and/or calls to discuss the following areas:

- Architecture and Design
- Implementation
- Ordering and Billing
- Service and Support
- Project Management

Please describe your company's ability to hold monthly meetings on each of these topics, as well as your company's implementation plans for starting these discussions.

ViON currently executes program meetings at least semi-monthly on various customer programs. These regular recurring meetings include the ***ViON PMO Project Manager***, and the contract management team, as well as the customer Program Manager and their support staff (technical, security and contracts team members). Examples of meeting agenda items may include the following:

- Action items status
- Status of Call Orders in progress
- Status of existing implementations
- Overall project management items
- New/Future Workloads/Call Orders
- Architecture and design requirements
- Preventative maintenance status/schedule
- Remedial maintenance issues
- Engineering/architecture topics
- Pilot/POC status
- New Technology briefs (as necessary or requested)
- Program integration items (service tickets, changes control, etc.)
- Implementation milestone reviews and issues
- Contractual issues
- Billing issues
- New service architecture requirements
- Risk Management Reviews

ViON schedules these meetings after the initial kick-off meeting with the appropriate stakeholders from the State coordinating around preferred meeting times and locations to ensure

that all necessary topics are covered. Communication modes are agreed to by both ViON and the Customer. ViON's PMO Project Manager provides an agenda for each meeting. As part of our recommended practice, ViON typically holds these meetings weekly (depending on the topic), but we can adjust the schedule according to how the State wants to conduct business. These meetings will be held on a consistent basis throughout the life of the project.

4.2.2.6 Vendor should provide an example of a maintenance plan outlining the roles and responsibilities of the vendor as it relates to the scoped managed services outlined. The maintenance plan should outline maintenance requests and the approval process.

ViON's Implementation and Transition Plan (Appendix A) included information pertaining to the maintenance plan set forth for our Government customer. Highlights of the plan content are included below. Our maintenance plans outline roles and responsibilities of both ViON and the customer to eliminate confusion and streamline operations. ViON's maintenance plan will ***outline the key maintenance activities for maintaining the ViON provided storage and compute infrastructure as well as for the WVOT-wide infrastructure monitoring requirements***. In addition, ViON's maintenance plan will outline maintenance requests and approval processes. ViON adheres to the Information Technology Infrastructure Library (ITIL) framework for service delivery and focuses on the following concentrations to:

- Service Strategy
- Service Design
- Service Transition
- Service Operation
- Continual Service Improvement

The ViON maintenance plan provides typically aligns with customer established policies and procedures guidance for the overall System Development Lifecycle and Enterprise Architecture. The maintenance plan will detail procedures initiating maintenance requests as well as any required approval processes. The plan will also outline procedures for Service Operations and Maintenance including systems control, routine and preventative maintenance and scheduled or unscheduled actions aimed at preventing equipment failure or decline. Other focus areas of the maintenance plan include details for:

- Incident Management
- Problem Management
- WVOT-wide Infrastructure Monitoring
- ViON Infrastructure Performance Tuning
- Disaster Recovery Support

4.2.2.7 If the Vendor's work requires them to be at a State site, the Vendor should provide the Agency at least seventy-two (72) hours' notice before arriving at the site. Vendor should comply with all Agency policies, State laws, and background checks for contractors, Vendor's, and visitors. Vendor should describe their approach to this requirement.

ViON understands, accepts, and acknowledges that we will provide the agency at least a 72-hour notice before arriving to the site and will comply with all agency policies, state laws, background checks for contractors, vendor's, and visitors. ViON has assembled a **team of experts to provide 24x7x365 problem identification and resolution services in both a proactive and a reactive capacity**. This team and these services shall include maintenance and support for hardware, operating system software, hypervisor solution, as well as, any other software required for the ViON solution to operate, and service management infrastructure. This team consists of the following:

- ViON Support Center specialists
- ViON local Field Engineers
- ViON local onsite processor and software engineers familiar with the customer's infrastructure, operation, and processes
- OEM hardware experts
- OEM software experts

ViON's support starts with the ***ViON Support Center (VSC), manned 24x7x365 days/year with OEM-trained technicians averaging more than 10 years' experience***. ViON will communicate with the designated customer work unit, arrange for Form 7s (or applicable WVOT visit form) to be generated and will coordinate with all site requirements. ViON has been performing and coordinating maintenance for our government customers since 2003.

We will accept calls placed by all authorized customer activities and persons. Such calls are placed to our VSC help desk via a toll-free telephone call. Upon receipt of authorized service request by the customer, or when prompted by on-board diagnostics, we will contact the customer designated work unit in order to inform them of the need for service and to request a Form 7(or applicable WVOT visit form) be opened. When ViON or a representative arrives at a site to perform such maintenance the customer designated work unit will be contacted prior to starting work.

Upon arrival at a WVOT managed site, a ViON repair representative (or authorized partner) will promptly report to the customer designated work unit at each site, and after completing the service, will deliver a report containing all aspects of the required services, whether hardware, OS or other software required. The procedures described here will enable ViON to ensure that the processor capacity required by customer will be delivered - as ViON has consistently done for the agency over numerous contracts for many years. ViON has an established process for taking back assets returned from service for any reason. Assets placed with customer in service of the WVOT contract will be returnable by the Government in accordance with contract terms and conditions, and coordinated with the appropriate customer policies, procedures, and personnel; e.g., direction received from the COR and/or CO, in accordance with customer designated instructions, and Form 7 (or applicable WVOT visit form) coordination with the site manager, etc.

The process would begin with the initial request for a move. A task or activity would then be created describing the work to be done and would be assigned to appropriate personnel (generally ViON's FEs or SEs). The work history describing each step, including work logs entered by the tech support staff, all become part of the permanent record associated with that

asset. ***In addition, ViON will leverage knowledge gained from the Change Management Systems (CMS) provided for similar contracts to document and manage all aspects of an asset's lifecycle.*** When an asset is no longer needed for a specific purpose, it will be recovered and can be redeployed. As delivered, the CMS includes out-of-the-box reports that will meet all monthly summary reports requirements.

4.2.3 Contract Management

4.2.3.1 Contract Management: Vendor's proposed solution should provide applicable, supported hardware, software, middleware, and technical dependencies that enables contract management from the business management perspective of centralized ordering, billing, financial auditing, and reporting.

The ViON Cloud Services Portal (VCSP) provides the tools to deliver end-to-end program governance, resource provisioning, call order management, asset management and automated operational orchestration / provisioning to efficiently manage and drive value across all data center deployments from a single interface.

The VCSP is a complete system which provides the governance framework and facilitates all facets of IT Business Management (ITBM), from the call order process from centralized ordering, government acceptance, monthly billing, asset management, configuration management and reporting. This includes ordering new services, ordering increases and decreases in capacity and ordering the cancellation of services.

The VCSP enforces validation of all call orders through both product modeling and customizable approval workflows as well as providing a readily available audit trail of all actions performed within the system for each call order (initial delivery, increases, decreases, and cancelation of services). The VCSP also retains a complete audit trail of all Once a call order is approved, automated and semi-automated workflows spawn tasks within the system to manage the product delivery and notifications of status as the order delivery process proceeds to completion. All throughout this process the system collects metrics which are used to report and ensure that ViON is meeting the contractual SLAs for delivery of services. In addition to supporting order processing, billing, and reporting, the VCSP is used by ViON for asset and configuration management of all contract assets (hardware and software). ***This will allow us to provide detailed reporting to WVOT integrating asset and billing information into a single integrated dashboard view or via exportable reports. The VCSP online portal is delivered to WVOT as part of ViON's solution.***

4.2.3.2 Included Professional Services: Vendor should provide professional services for configuration and management of the solutions, as well as training for no less than ten (10) persons. Vendor should also produce documentation (either vendor or manufacturer created) showing how the systems work and how changes can be made if needed.

ViON understands and agrees that professional services for configuration and management of the infrastructure, backup, and monitoring solutions should be included. Along with our partners, Dell Technologies, and ScienceLogic, we will ensure delivery of the solution is performed and configured to meet WVOT's requirements and expectation using ViON's RFU process. ViON also will deliver management of the infrastructure, backup, and monitoring solutions as required by WVOT. Additionally, we will deliver manufacturer documentation to WVOT for all of the solutions provided, and in certain cases, we will deliver operational run books to WVOT to

facilitate operational management to WVOT personnel. The operational runbooks detail customized operations within WVOT's environment and built to provide immediate value for personnel responsible for delivering operations for WVOT.

ViON agrees to provide training and/or familiarization to customer-designated System Administrators for provided infrastructure. All such training requirements will be included in the utility price offered by ViON. Our training plan will provide WVOT and/or ViON operated facilities:

- All or some combination of OEM documentation guides
- Existing Computer Based Training manuals
- Training hours and in-person/virtual classroom training

Technical/training support will reoccur when new hardware is introduced to the processing environment. Technical/training support will be provided as part of the total managed service. All training mediums offered will support a minimum of ten (10) State or State-contracted personnel.

4.2.3.3 Billing: Vendor's proposed solution should provide billing capabilities designed to simplify the procedures of a chargeback model, as well as provide a holistic view of service. The state desires the billing detail to include but not be limited to billing by agency, consumption usage by agency, inventory, and disaster recovery services. Vendor should provide an example of billing capabilities designed to simplify the procedures of a chargeback model, as well as provide a holistic view of service. (Example: Department of Transportation charges broken down as specified above)

ViON has provided IT systems for the customer's use on Services contracts for many years. We are very familiar with the varying customer requirements in this regard and have a well-documented process for beginning the billing cycle of Services contracts for customer known as Ready for Use. ViON agrees that acceptance of equipment by the Government will start the billing cycle for this service and all billing will be 30 days in arrears. ViON will work with the customer to ***develop a new acceptance validation (an "RFU") to smoothly transition equipment into the customer production environment.*** The official acceptance validation documentation will be provided by the customer after contract award.

ViON understands and agrees that billing will stop based on the date of deactivation of the equipment and official cancellation of the original call order, *not* removal of the equipment from the customer site. The date of deactivation will coincide with the first business day after the receipt of the deactivation Call Order for any given deactivation.

We create invoices directly from call order data as entered in the VCSP and does not require the collection, manipulation, or review of usage data. ViON will create invoices directly from data provided by the customer in its "contract call order", augmented by the "Acceptance" and "Deactivation" date that begins monthly charges (increases and decreases) for the resources ordered and provisioned. In addition, during contract initiation, ViON will configure the VCSP to support WVOT's desired reporting and billing schema to identify charges by individual state agencies, departments, or offices. The VCSP can be configured to provide a holistic program view of all services in use by WVOT along with a breakdown of individual billing, consumption usage, inventory and disaster recovery services by state agency such as the Department of

Transportation, Department of Environment Protection, Department of Health and Human Resources, and etc. to simply and support the WVOT's desired chargeback model.

ViON will employ a monthly billing cycle based on the number of days in each month. At the end of a month, the order processing system is queried to display a sample invoice based on:

1. Orders that remained in service the entire month with no changes
2. Orders placed in service during the month using the 15th of the month rule
3. Orders implemented during the month that increased, decreased, or cancelled services using the 15th of the month rule

ViON acknowledges that acceptance that occurs on the 15th of the month or prior to the 15th of the month will be billed for the entire month in which acceptance has occurred **(Example 1)**. For acceptance that occurs after the 15th of the month, billing will begin with the following month **(Example 2)**.

Example 1 – Acceptance by or on the 15th of the month: WVOT places a call order for 10TB of storage and ViON delivers the capacity on the 14th of April. WVOT acknowledges acceptance of RFU on the 15th of April. WVOT's invoice as of 1 May ***will*** include the billing for this order for the month of April.

Example 2 – Acceptance after the 15th of the month: WVOT places a call order for 10TB of storage and ViON delivers the capacity on the 18th of April. WVOT acknowledges acceptance of RFU on the 19th of April. WVOT's invoice as of 1 May ***will not*** include the billing for this order for the month of April. WVOT will begin to be billed for this order on 1 June for the first full month of service.

For deactivations that occur on the 15th of the month or prior to the 15th of the month, no billing will occur for the entire month in which the deactivation occurs **(Example 3)**. For deactivations that occur after the 15th of the month, billing will be for the entire month **(Example 4)**.

Example 3 – Deactivation or decrease by or on the 15th of the month: WVOT places a call order to decrease 10TB of storage and ViON de-provisions the capacity on the 14th of April. WVOT acknowledges acceptance of RFU on the 15th of April. WVOT's invoice as of 1 May will reflect the decreased cost associated with the decreased capacity for this order for the month of April.

Example 4 – Deactivation or decrease after the 15th of the month: WVOT places a call order to decrease 10TB of storage and ViON de-provisions the capacity on the 18th of April. WVOT acknowledges acceptance of RFU on the 19th of April. WVOT's invoice as of 1 May will still include the billing for the original capacity for the month of April. WVOT will begin to be billed for this decrease in capacity for the order on 1 June.

ViON will create a draft invoice and submit it to the designated customer COR who reviews/corrects, as necessary, the draft invoice. Following this feedback, ViON will formally submit the invoice via the customer designated invoicing system. The invoice will be constructed to customer specification and supporting details will be appended in the form of a spreadsheet file that can be easily manipulated to provide a variety of different sorts and views of the underlying data. ViON understands that submission of the monthly invoice for the prior month's activity is routinely completed no later than the fifth working day of the month with

Government approval no later than the tenth working day of the month. ViON also understands that financial data within the invoice will contain no more than 2 decimal places.

4.2.3.4 Financial Reporting: Vendor's proposed solution should develop and provide financial reporting to meet the State's reporting obligations and the State' s goals of transparency and technology optimization.

ViON will provide a Weekly Order Summary report which will include (but are not limited to) the following information elements: Call Order number, CLIN and SLIN descriptions, Customer Department or Office, Project Name, Technical Point of Contact (TPOC), Quantity Requested, Base Price, Extended Price, Order Received Date, Provisioned Date, Acceptance "RFU" Date and Order Comments. This report is generated by the VCSP system and will include a separate line item for every amendment on all call orders. Additionally, we will provide a monthly Asset Report to provide the State with insight into ViON deployed assets in use on the contract. ViON also has the capability of developing and providing a customized reporting dashboard to allow any State authorized user access that will assist in meeting the State of West Virginia's reporting obligations and goals of transparency technology optimization.

4.2.3.5 Third Party Terms and Conditions: Vendor should limit pass-through of third- party terms and conditions; Vendor should describe how their proposal meets this goal.

ViON understands the Third Party Terms and Conditions and will limit pass-through of work to third party vendors to those with specialized skills or technology required to appropriately support WVOT's requirements.

4.2.4 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 should 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, will be included in technical scores where appropriate. The mandatory project requirements are listed below

4.2.4.1 General Mandatories

4.2.4.1.1 The State of West Virginia reserves the right to move, change or add additional Data Center locations.

ViON understands, accepts, and agrees with the State's right to move, change, or add additional data center locations under this contract. ***ViON's solutions in our aaS model allow for flexibility in consumption, delivery, and can relocate, move, change, or add systems in additional, replacement, or new data center locations, and ViON has established teammates certified in Data Center Moves, including full racks.*** ViON's professional services teams are experienced moving data center infrastructure for customers all around the United States and even around the world and can accommodate any changes in physical locations required by the State of West Virginia.

4.2.4.1.2 WVOT will not accept penalties for scaling down any tier solution, expansion node, expansion storage or infrastructure monitoring node(s).

ViON understands, accepts, and agrees that there will be no penalties for scaling down any tier solution, expansion node, expansion storage or infrastructure monitoring node (s).

4.2.4.1.3 The Vendor must agree that the State owns all data gathered under the scope of this contract. The Vendor must produce and/or return the data upon the State's request in an editable format mutually agreeable to both parties. If any component (e.g. disk drive) fails, the Vendor must ensure any data on said component is destroyed in accordance with WVOT policies and certify, either in writing or some other mutually agreeable format, that any data on said component was destroyed.

ViON understands, accepts, and agrees that all data gathered under the scope of this contract is owned by the State and that ViON will produce and/or return the data upon the State's request in an editable format. ViON will adhere to West Virginia data destruction policies and regulations, and ViON will ensure any data on said component is destroyed in accordance with WVOT policies and certify, either in writing or some other mutually agreeable format, that any data on said component was destroyed.

4.2.4.1.4 Vendor shall provide the State full access to any and all encryption keys the Vendor may generate in support of this contract.

ViON understands, accepts, and will provide the State full access to any and all encryption keys the Vendor may generate in support of this contract.

4.2.4.1.5 Vendor shall ensure all solution expenses associated with this contract are captured within the pricing sheet.

ViON understands, accepts, and confirms that all solution expenses associated with this contract are captured within the pricing sheet.

4.2.4.2 Cybersecurity Mandatory Requirements

4.2.4.2.1 Vendor proposed solution must be capable of adherence to federal and state law.

As detailed further below, ViON proposed solution is capable of adhering to all Federal and State cyber security laws. ***We have delivered more than 50 IaaS programs delivered across State and Local Governments and US Federal Departments, Bureaus, and Agencies both on and off premise – and meeting all associated cybersecurity requirements is an integral part of this work. Such requirements are often particularly stringent with the US Federal Government, to whom we have been continually providing aaS solutions for 17 years.***

4.2.4.2.2 Vendor's proposed solution must adhere to the State of West Virginia's Cyber Security & Privacy policies, procedures, and standards; these can be viewed at the following link:

https://technology.wv.gov/security/Pages/policies-issued-by-the-cto.aspx

ViON understands, accepts, and will comply with the State of West Virginia's Cyber Security & Privacy policies, procedures, and standards; located at the link provided.

This includes all standards related to Remote Access Authentication, Advanced E-Mail Protections, and Payment Card Industry Data Security as applicable.

We are also familiar with and will comply with/ assist WVOT compliance with, all applicable policies, ensuring that we are following the most current/up to date versions of these, to include:

- CTO Review Approval

- Acceptable Use of Portable and/or Wireless Devices
- Acceptable Use of State-Provided Instant Messaging
- Accreditation and Certification
- Account Management
- Malicious Software/Anti-Virus
- Change & Configuration Management
- Cloud Services - OneDrive for Business
- Contractor Management (to include Contractor Information Forms, and Employment Confirmation)
- Data Backup and Retention
- Data Classification Revised
- E-Mail Use Standards (per WV Admin Code Title 163)
- Information Security Auditing Program
- Information Security Policy
- Internet Usage
- IT Policy and Procedure Development
- Network Violation Reporting
- Media Protection
- Use of Social Media Revised
- Wireless Access Points
- WVOT Monitoring Policy
- Technical Investigations
- FOIA Request for Information (where appropriate/ directed)
- Vulnerability Scanning

4.2.4.2.3 Vendor proposed solution must be capable of adherence to all applicable security and privacy standards that are subject to the following:

Health Insurance Portability and Accountability Act (HIPAA) requirements as outlined in the attached Business Associate Addendum (BAA);

Federal Information Security Management Act (FISMA), National Institute of Standards Technology 's Special Publication (NIST SP) 800- 53, NIST SP 800-17 which serve as the baseline; Family Education Rights and Privacy Act (FERPA) requirements; Criminal Justice Information System (CJIS) requirements; Payment Card Industry Data Security Standards (PCI-DSS) requirements; Federal tax Information (FTI) and Internal Revenue Service publication 1075 (IRS 1075) requirements; Centers for Medicare & Medicaid (CMS) Services Information Security Policy requirements.

ViON's proposed solution is capable of adherence with all applicable security and privacy standards as noted in solicitation section 4.2.4.2.3 above as follows:

- Health Insurance Portability and Accountability Act (HIPAA) requirements as outlined in the Business Associate Addendum (BAA)
- Federal Information Security Management Act (FISMA), National Institute of Standards Technology 's Special Publication (NIST SP) 800- 53, NIST SP 800-17 which serve as the baseline
- Family Education Rights and Privacy Act (FERPA) requirements
- Criminal Justice Information System (CJIS) requirements

- Payment Card Industry Data Security Standards (PCI-DSS) requirements
- Federal tax Information (FTI) and Internal Revenue Service publication 1075 (IRS 1075) requirements
- Centers for Medicare & Medicaid (CMS) Services Information Security Policy requirements.

Our experience with Federal agencies such as the National Institutes of Health and the Department of Justice, as well as a wide sampling of State, and Local customers, ensures we are familiar with all such guidelines and their implementation as a matter of course. This experience means that WVOT can be assured that ViON will meet all their regulatory requirements on this contract.

4.2.4.2.4 The Vendor must adhere to personnel security requirements for background checks in accordance with state law. The vendor is liable for all costs associated with ensuring their staff meets all requirements.

ViON understands, accepts, and will adhere with personnel security requirements for background checks in accordance with West Virginia state law. ViON will be responsible and held liable for all costs associated with ensuring our staff meets all requirements. Having provided professional services to the State of West Virginia for the emergency backup solution in 2019, ***ViON has experience onboarding personnel through the security and background process of West Virginia***. Many of ViON's customers require Department of Defense clearance levels so many of the ViON employees already meet State level requirements, as well as the security levels typically more stringent that those required at state and local level.

4.2.4.2.5 The Vendor must implement and strictly adhere to physical equipment inventory policy and procedures that are designed to ensure data protection.

ViON will implement and strictly adhere to physical equipment inventory policy and procedures that are designed to ensure data protection. Our Cloud Service Portal which supports the infrastructure for Data Center 2.0 includes asset management. As part of ViON's policy, within aaS program offerings, all ViON owned assets are required to be registered into our asset management system before deployment.

4.2.4.2.6 The Vendor must adhere to industry-standard data destruction measures and provide the state with written attestation of data destruction. This includes failed hardware where State data may reside.

ViON will adhere to industry-standard data destruction measures and provide the state with written attestation of data destruction including failed hardware in which West Virginia data may reside.

4.2.4.2.7 All Vendor's must ensure that any equipment or software used is not at manufacturer's specified "end of life" (EOL) or "end of support" (EOS) dates and will be supported by the original manufacturer. Maintenance and Support contracts shall be maintained by the vendor on all equipment and software for the life of this contract. Copies of such contracts should be provided to the State with Vendor's response.

ViON will ensure that any equipment or software used is not at manufacturer's specified "end of life" (EOL) or "end of support" (EOS) dates and will be supported by the original manufacturer.

ViON will maintain maintenance and support contracts on all equipment and software for the life of this contract. ViON has attached in **Appendix B** copies of such contracts for the State of West Virginia.

4.2.4.3 On-Premise Infrastructure Mandatory Requirements: Pricing for Vendor's proposed solution must provide supported hardware, software, middleware, technical dependencies, and/or managed services (where applicable) to ensure that all the goals/objectives of this RFP are met. The price for each solution, node expansion and storage expansion must be entered on the pricing sheet (Attachment "A").

Pricing for ViON's proposed solution includes all supported hardware, software, middleware, technical dependencies, and/or managed services (where applicable) and ViON confirms that all the goals/objectives of this RFP are met. The price for each solution, node expansion and storage expansion has been be entered on the pricing sheet (Attachment "A").

4.2.4.3.1 Virtualization. The on-premise infrastructure solution must be compatible with industry-standard virtualization software. The State currently leverages VMWare. The Operating System (OS) and virtualization licensing are outside the scope of the on-premise infrastructure component.

ViON's proposed solution utilizes and includes VMware as the industry-standard virtualization software. ViON understands that Operating System (OS) and virtualization licensing are outside of the scope of the on-premise infrastructure component.

4.2.4.3.2 Networking. The on-premise solution must include all components to enable the internal networking of the on-premise infrastructure. The State will provide boundary networking capability enabling the network connection of the infrastructure to the state's internal network and to the Internet.

ViON's proposed solution does include all components to enable the internal networking of the on-premise infrastructure. ***ViON understands that the State will provide boundary networking capability enabling the network connection of the infrastructure to the state's internal network and to the Internet.***

4.2.4.3.3 Active Directory Domain. The on-premise solution must be capable of integrating with the WVOT's Active Directory (AD) domain

ViON's proposed solution is capable of integrating with the WVOT's Active Directory (AD) domain.

4.2.4.3.4 Domain Name Service (DNS). The on-premise solution must be capable of integrating with WVOT's DNS.

ViON's proposed solution is capable of integrating with WVOT's DNS.

4.2.4.3.5 The Base Solution for all tier levels must have the ability, to be provisioned by the State, with the following minimum specifications:

- 24 CPU cores at a minimum of 2.6GHz processing speed
- 512 GB RAM
- 500 GB Performance Storage

- 1 TB of Volume Storage

ViON confirms that the base solution for all tier levels meets or exceeds the stated minimum specifications.

Required by the State	Provided by ViON	Significance/Benefit
24 CPU cores at 2.6Ghz processing speed	64 CPU cores at 2.80Ghz processing speed	**Exceed.** ViON believes the State's virtualization performance and virtual machine density requirements will be better fulfilled with 32 CPU cores per node, and ViON is providing 2 nodes in each base solution. This CPU core density also provides the State better cost efficiencies than 24 CPU cores would in the current generation of Intel Cascade Lake processors. **Increase of 166% CPU Cores.**
512GB RAM	1152GB of RAM	**Exceed.** Based on OEM best practices, ViON believes the State's virtual machine density requirements will be better met with 576GB of RAM per node, and ViON is providing 2 nodes in each base solution. **Increase of 125% of RAM.**
500GB Performance Storage	500GB Performance Storage	**Meet.** ViON agrees with the State that a 500GB starting capacity for Performance Storage in each base tier allows the State the most flexibility when expanding or decreasing Performance Storage via an as-a-Service consumption model.
1TB Volume Storage	1TB Volume Storage	**Meet.** ViON agrees with the State that a 1TB

Required by the State	Provided by ViON	Significance/Benefit
		starting capacity for Volume Storage in each base tier allows the State the most flexibility when expanding Volume Storage via an as-a-Service consumption model.

Figure 15: ViON exceeds required Specifications

ViON's base solution for Tier 0 includes the following:

- One (1) Cisco USC 5108 blade chassis
- Two (2) Cisco UCS M200 M5 blade servers, with each server containing:
  - Two (2) Intel Xeon Gold (Cascade Lake) 6242 processors that each contain sixteen (16) cores running at 2.80Ghz per core
  - 576GB of RAM
- One (1) Dell EMC Unity 680F performance storage subsystem provisioned with 500GB of performance storage. Additional performance storage is provisioned via the Performance Storage expansion SLIN for Tier 0
- One (1) Dell EMC Isilon H500 volume storage subsystem provisioned with 1TB of volume storage. Additional volume storage is provisioned via the volume storage expansion SLIN for Tier 0
- All necessary switching, cabling, PDUs, racks and other ancillary

ViON's base solution for Tiers 1 and 2 includes the following:

- One (1) Cisco USC 5108 blade chassis
- Two (2) Cisco UCS M200 M5 blade servers, with each server containing:
  - Two (2) Intel Xeon Gold (Cascade Lake) 6242 processors that each contain sixteen (16) cores running at 2.80Ghz per core
  - 576GB of RAM
- One (1) Dell EMC PowerMax 8000 storage subsystem provisioned with 500GB of performance storage. Additional performance storage is provisioned via the performance storage expansion SLIN for Tier 1 or 2
- One (1) Dell EMC Isilon H500 volume performance storage provisioned with 1TB of volume storage. Additional volume storage is provisioned via the volume storage expansion SLIN for Tier 1 or 2
- All necessary switching, cabling, PDUs, racks and other ancillary equipment

4.2.4.3.6 The Node Expansion for all tier levels must have the ability, to be provisioned by the State, with the following minimum specifications:

- 12 CPU core expansion
- 256GB RAM

ViON confirms that the Node Expansion for all tier levels exceeds the stated minimum specifications.

Required by the State	Provided by ViON	Significance/Benefit
12 CPU core expansion	32 CPU core expansion	**Exceed.** ViON believes that the State will receive the best performance and cost by utilizing 32 CPU core expansion increments for each Node Expansion, while outperforming the States stated requirement. **Increase of 166% in CPU Cores.**
256GB RAM	576GB RAM	**Exceed.** ViON believes that the State will receive the best virtual machine density per expansion node by utilizing 576GB core expansion increments for each Node Expansion. **Increase of 125% of RAM.**

Figure 16: ViON exceeds required Specifications

ViON's Node Expansion for all tier levels will include the following specifications when provisioned by the State:

- One (1) Cisco UCS M200 M5 blade server, containing:
  - Two (2) Intel Xeon Gold (Cascade Lake) 6242 processors that each contain sixteen (16) cores running at 2.80Ghz per core
  - 576GB of RAM

4.2.4.3.7 The Storage Expansion for all tier levels must have the ability, to be provisioned by the State, with the following minimum specifications:

- Performance Storage of 10TB
- Volume Storage of 25TB

ViON confirms that the Storage Expansion for all tier levels meets or exceeds the stated

minimum specifications.

Required by the State	Provided by ViON	Significance/Benefit
Performance Storage of 10TB	10TB of Performance Storage	**Meet.** ViON agrees with the State that 10TB expansion capacity increments for Performance Storage in each base tier allows the State the most flexibility when expanding or decreasing Performance Storage via an as-a-Service consumption model.
Volume Storage of 25TB	30TB of Volume Storage	**Exceed.** ViON believes that the State will have the most flexibility by utilizing 30TB expansion capacity increments for Volume Storage in each base tier via an as-a-Service consumption model. **Increase of 20% of Volume Storage.**

Figure 17: ViON exceeds required Specifications

Each Storage Expansion SLIN for Performance Storage for Tiers 0, 1 and 2 provides the State with the ability to provision 10TB of Performance Storage for those respective Tier 0, 1 and 2 Base Solutions.

Each Storage Expansion SLIN for Volume Storage for Tiers 0, 1 and 2 provides the State with the ability to provision 30TB of Volume Storage for those respective Tier 0, 1 and 2 Base Solutions.

4.2.4.4 Enterprise Data Backup Mandatory Requirements

Pricing for Vendor's proposed solution must provide supported hardware, software, middleware, technical dependencies and/or managed services (where applicable) to ensure that all the goals/objectives of this RFP are met. The price for the solution must be entered on the pricing sheet (Attachment "A").

ViON's pricing for proposed solution does provide for supported hardware, software, middleware, technical dependencies and/or managed services (where applicable) to ensure that all the goals/objectives of West Virginia's RFP are met. ViON's price for the solution will be entered on the pricing sheet (Attachment "A").

4.2.4.4.1 Pricing Structure.

The pricing structure will account for the following components.

4.2.4.4.1.1 Data Backup Initial Installation.

The initial installation line item is designed to include all aspects to scope, design, architecture, implement, configure, test, train, and operational hand-off the capability to the State.

ViON's pricing structure does include a line item for the initial installation of the Enterprise Data Backup solution including the following deployment tasks: scope, design, architecture, implement, configure, test, train, and operational hand-off the capability to the State.

4.2.4.4.1.2 Data Backup Solution.

The data backup solution provides the monthly cost for base level solution. The data backup solution must include:

4.2.4.4.1.2.1 Data backup for one-hundred fifty (150) TB.

4.2.4.4.1.2.2 Data backup capability at two (2), physically separate locations for redundancy.

ViON will ensure the data backup solution provides the monthly cost for base level solution and will include:

Required by the State	Provided by ViON	Significance/Benefit
Data Backup for 150TB	240TB of Backup Storage	**Exceed.** ViON believes that the State will receive the best initial value in the Enterprise Data Backup solution if 240TB are provided. **Increase of 60% Backup Storage.**
Data Backup Expansion of 50TB	50TB of Data Backup Expansion	**Meet.** ViON agrees with the State that 50TB expansion capacity increments for Enterprise Data Backup storage allows the State the most flexibility when expanding Enterprise Data Backup solution via an as-a-Service consumption model.
Data backup capability at 2 physical sites for redundancy	Data Backup capability at 2 physical sites for redundancy	**Meet.** ViON agrees with the State that data backup capability should be spread across 2 physical sites for redundancy in order to facilitate data resiliency.

Figure 18: ViON exceeds required Specifications

The IDPA 8300 solution will provide at least 240TB's of initial capacity with the option to immediately increase to 300TB's as needed per the aaS model. ViON will leverage the existing

IDPA 8300 as the DR target device to provide data protection & backup redundancy at two physically separate sites.

4.2.4.4.1.3 Data Backup Expansion.

The data backup expansion line item is designed to include costs associated with the storage expansion of the solution. The data backup expansion must include:

4.2.4.4.1.3.1 Minimal backup storage expansion of fifty (50) TB.

ViON's data backup expansion will include the required minimal backup storage expansion of fifty (50) TB. ***The IDPA8300 will provide an immediate capacity expansion of 50TB's usable as required by the customer and can be increased in additional 50TB usable increments as needed for future capacity expansion.***

4.2.4.4.2 Physical Infrastructure Location.

Any physical infrastructure should be installed at a State-owned or State-leased data center location. Any change of location for the physical infrastructure is a decision held solely by the State.

ViON confirms that all physical infrastructure shall be installed at a State-owned or State-leased data center location and that any change of location for the physical infrastructure is a decision held solely by the State.

4.2.4.5 Infrastructure Operational Monitoring Mandatory Requirements –

Pricing for Vendor's proposed solution must provide supported hardware, software, middleware, technical dependencies and/or managed services (where applicable) to ensure that all the goals/objectives of this RFP are met. The price for each monitored system (or group of monitored systems) must be entered on the pricing sheet (Attachment "A").

Pricing for ViON's proposed Infrastructure Operational Monitoring solution does include all supported hardware, software, middleware, technical dependencies, and/or managed services (where applicable) and ViON does confirm that all the goals/objectives of this RFP are met. ViON also confirms that the price for each monitored system (or group of monitored systems) has been entered on the pricing sheet (Attachment "A").

4.2.4.5.1 Pricing Structure:

4.2.4.5.1.1 Infrastructure Monitoring Initial Installation.

The initial installation line item is designed to include all aspects to scope, design, architecture, implement, configure, test, train, and operational hand-off the capability to the State.

ViON confirms that the initial installation line item for the Infrastructure Operational Monitoring solution is designed to include all aspects to scope, design, architecture, implement, configure, test, train, and operational hand-off the capability to the State.

4.2.4.5.1.2 Infrastructure Monitoring Solution.

The solution line item provides the monthly cost for base level solution. The infrastructure monitoring solution must, minimally, include the ability to operationally monitor two-hundred fifty (250) components. A component consists of a physical device or a software instance.

ViON confirms that the base line item does include any and all monthly costs associated with component rollout of the SL1 platform infrastructure monitoring solution. The SL1 platform is

robust enough to monitor thousands of components across multiple environments, yet flexible enough to monitor smaller sets of components including a minimal component volume expansion of two-hundred fifty (250) components. ViON understands that a component consists of a physical device or a software instance.

4.2.4.5.1.3 Infrastructure Monitoring Expansion.

The expansion line item is designed to include costs associated with component expansion of the solution. The expansion must, minimally, include a component volume expansion of fifty (50) components.

ViON confirms that the expansion line item does include any and all costs associated with component expansion of the SL1 platform infrastructure monitoring solution. ***The SL1 platform is robust enough to monitor thousands of components across multiple environments, yet flexible enough to monitor smaller sets of components including a minimal component volume expansion of fifty (50) components.***

4.2.4.6 On-Demand Professional Services Mandatory Requirements –

Pricing for any professional services must be fully " loaded" to capture all direct and overhead expenses, travel, per diem, and any other travel-related expenses. Prices for all positions included in this RFP must be entered on the pricing sheet (Attachment "A").

ViON understands professional services must be fully loaded to capture all direct and overhead expenses, travel, per diem, and any other travel-related expenses. Prices for all positions in this RFP are entered in the pricing sheet (Attachment A).

4.2.4.6.1 Vendor must agree to an open-end contract method, where prior to each potential engagement of professional services, a Statement of Work will be drafted and mutually agreed upon by both parties. After a SOW is finalized, each engagement will be initiated by the State via Delivery Order that incorporates the SOW. This applies to all professional service positions listed in Specifications 4.2.1.4. No Statement of work will be permitted to include work unrelated to Data Center 2.0.

ViON agrees to an op-end contract method, where prior to each potential engagement of professional services, a SOW will be drafted and mutually agreed upon by both parties ViON will work with State to determine the required skills, scope, and requirements for each potential professional services engagement. Once agreed upon, ViON will develop a Statement of Work in coordination with the State, outlining the requirements, the scope of work, any deliverables, and price for the engagement. After the SOW is finalized, ViON will initiate the professional services after receipt of the State's Delivery Order that incorporates the SOW. ViON agrees that all professional services engagements will operate in this capacity and they will not be unrelated to Data Center 2.0.

4.2.4.7 Contract Management Mandatory Requirements

4.2.4.7.1 The successful Vendor must assign an experienced and skilled Project Manager who will provide a high-level project management plan including key components such as a project charter, issue tracking, statements of work (SOW), work breakdown structures (WBS), implementation schedules, etc. in accordance with the Project Management Body of Knowledge (PMBOK) or other industry standard project management methodology stated in West Virginia State Code (§5A-6-4b). The link can be found at:

http://www.legis.state.wv.us/WVCODE/Code.cfm?chap=05A&art=6#06 . The project management plan must be submitted to and approved by the State prior to implementation.

ViON will assign an experienced and skilled Project Manager to provide a high-level project management plan which includes key components such as project charter, issue tracking, statements of work, work breakdown structures, implementation schedules, etc. in accordance with the PMBOK or other industry standard project management methodology stated in West Virginia State Code. Our project management plans will be submitted to and approved by the State prior to implementation.

For every solution that we provide, ViON ensures quality and risk mitigation for our customer through Project Management oversight. ***ViON Project Managers retain PMP certifications and have responsibility for ensuring that a project is completed on time and within budget. ViON project managers ensure a successful solution implementation for our customers.*** All ViON Project Managers are PMP certified through the Project Management Institute (PMI) and trained in accordance with the PMBOK project management methodology. ViON applies experience gained supporting State, Local, and Federal agencies with missions similar to the State of West Virginia to effectively manage contracts to meet client objectives. ViON follows our standard PMBOK project management methodology for the five major lifecycle phases: initiation, planning, executing, monitoring/controlling, and closeout. The figure below summarizes the major activities that ViON performs in each of these phases.

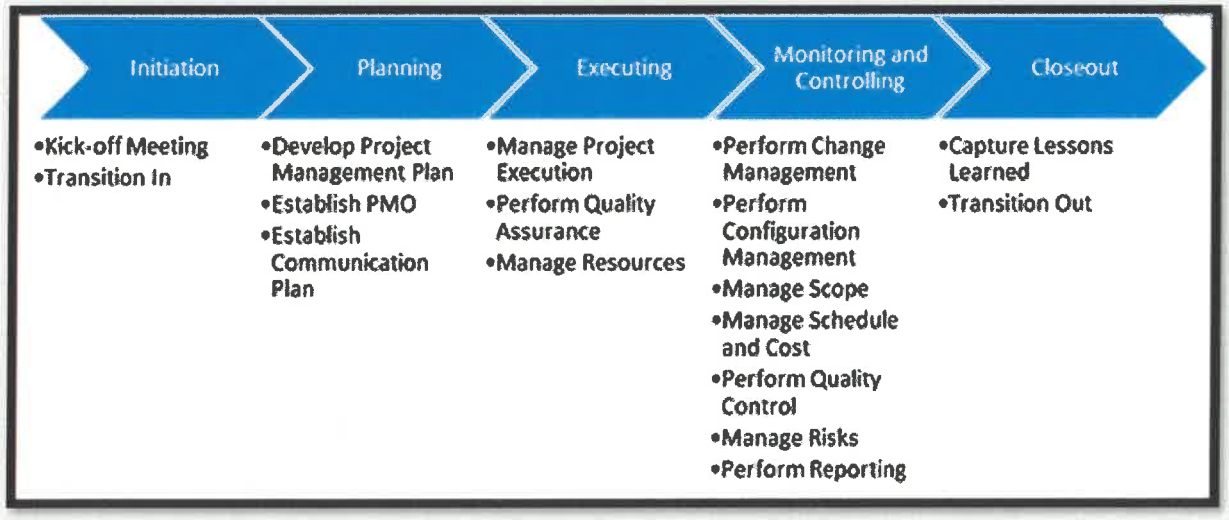


Figure 19: ViON's Project Management Methodology

4.2.4.7.2 The successful Vendor's Project Manager must track and report (via written status reports) the following: schedule, scope, budget, issues, risks, specified performance indicators, and other metrics determined appropriate throughout the project and each site implementation.

The ViON Project Manager, regularly reviews and monitors contract performance and identifies current and potential issues and risks. Preventive actions avoid predictable issues and mitigate or eliminate risks. Tracking and reporting enable ViON to correct problems and allow future tasks to benefit by identifying where we are performing well, and lessons learned. The Project Manager will track and report (via written status reports) the schedule, scope, budget, issues, risks, specified performance indicators, and other metrics determined appropriate throughout the

project and each site implementation. The Project Manager holds regular and ad hoc status meetings in accordance with the established Communications Plan with the technical staff or technical leads to track progress. The Project Manager keeps the State fully informed on project status during status meetings and as defined by the RFP requirements.

4.2.4.7.3 Vendor billing errors must be credited back to the State from the effective date of the error. The State reserves the right to withhold payment until credit is received.

ViON understands, agrees, and will comply with the State's billing error policy and procedures as described above, and understands the State reserves the right to withhold payment until credit is received effective from the date of the error.

4.2.4.7.4 For auditing, billing, and support purposes, the State requires any service with an associated rate to be identified on its monthly bill. As such, the State must be provided, at a minimum, the following:

- Billing Period
- Billed Entity Name
- Customer Name/Account (if different from billed entity)
- Itemized Cost for Individual Billing Components
- Total Cost

The cost identified in the bill must match the contract rates for the specified services.

ViON understands for auditing, billing, and support purposes, the State requires any service with an associated rate to be identified on its monthly bill, including but not limited to: **1) Billing Period; 2) Billed Entity Name; 3) Customer Name/Account; 4) Itemized Cost for Individual Billing Components; 5) Total Cost.** ViON understands, accepts, and will comply with the State's request for the cost identified in the bill to match the contract rates for specified services.

4.2.4.7.5 The Vendor must invoice on a consistent monthly billing cycle across all services. Increases or decreases for a partial month must be prorated based on the date of the service increase or decrease.

ViON will invoice on a consistent monthly billing cycle across all services. Increases or decreases for a partial month will be prorated based on the date of the service increase or decrease.

4.2.4.7.6 All tier Base Solution(s), Expansion Node(s), Expansion Storage, Enterprise Data Backup, and Infrastructure Operations Monitoring pricing must include the cost of delivery, physical installation, and initial physical configuration by the Vendor. The Vendor's unit price should be inclusive of all hardware maintenance and support costs.

ViON will ensure that all tier base solution(s), expansion node(s), expansion storage, enterprise data backup, and infrastructure operations monitoring pricing includes the cost of delivery, physical installation, and initial physical configuration. ViON's unit price will include all hardware maintenance and support costs.

4.2.4.7.7 Vendor must input pricing for each tier Base Solution(s), Expansion Node(s), Expansion Storage, Enterprise Data Backup, and Infrastructure Operations Monitoring in the pricing page. These costs will be a per month charge and include all costs for providing that

service as indicated elsewhere in this RFP. Vendor must also input a per hour charge for those professional services positions listed on the pricing page.

ViON will input pricing for each tier base solution(s), expansion node(s), expansion storage, enterprise data backup, and infrastructure operations monitoring in the pricing page. ViON will input a per hour charge for those professional services positions listed on the pricing page.

4.2.4.7.8 Vendor must input percent discount to the corresponding Asset in Service year periods on the pricing page. (Cells G4 through M4). Enter a whole number (e.g. 4) or fraction of a number (e.g. 7.5) corresponding to the percentage discount. The spreadsheet will automatically treat the number as a percentage.

ViON will input percent discount to the corresponding Asset in Service year period on the pricing page as instructed in the RFP. We will enter whole numbers or fraction of a number corresponding to the percentage discount. The spreadsheet will automatically treat the number as a percentage.

4.2.4.7.9 The Vendor's price in Asset in Service will be used by the State to calculate the cost of all orders. Orders placed in billing status in Year 1 will be billed at the subsequent Year's monthly unit price beginning in subsequent year. For example, a tier O solution ordered in month 1 of Year 1, will be invoiced at the Year 2 unit price beginning in Month 1 of Year 2.

ViON understands and accepts that ViON's price in Asset in Service will be used by the State to calculate cost of all orders. We understand that orders placed in billing status in Year 1 will be at the subsequent Year's monthly unit price beginning in subsequent year.

4.2.4.7.10 The State expects full, complete, and timely cooperation in disentangling the relationship if the Agreement expires or terminates for any reason. In the event of expiration or termination, the State expects that the Vendor shall, among other things: return all State data and documentation to the State, including but not limited to configuration information and allow the State or the replacement provider(s) continued view (read-only) access to all billing, previously placed orders, and previously opened trouble ticket system, and document processes that have been employed in servicing the State and provide the state a copy, in accordance with methods and procedures to be agreed upon and established in the Agreement. Please acknowledge your acceptance of this.

ViON understands, accepts, and will comply with the States requirement regarding full, complete, and timely cooperation in disentangling the relationship if the agreement expires or terminates for any reason. If the agreement expires or terminates, ViON will among other things: return all State data and documentation to the State, including but not limited to configuration information and allow the State or the replacement provider(s) continued view (read-only) **access to all billing, previously placed orders, and previously opened trouble ticket system, and document processes that have been employed** in servicing the State and provide the state a copy, in accordance with methods and procedures to be agreed upon and established in the Agreement. ViON acknowledges our acceptance of this requirement.

QUALIFICATIONS AND EXPERIENCE (RFP 4.3)

4.3 Qualifications and Experience: Vendor should provide information and documentation regarding its qualifications and experience in providing services or solving problems like those requested in this RFP. Information and documentation should include, but is not limited to,

copies of any staff certifications or degrees applicable to this project, proposed staffing plans, descriptions of past projects completed (descriptions should include the location of the project, project manager name and contact information, type of project, and what the project goals and objectives where and how they were met.), references for prior projects, and any other information that vendor deems relevant to the items identified as desirable or mandatory below.

In Appendix E, ViON has provided personnel certifications of the ViON delivery team as well as highlighting qualifications in Section 4.3.1.7. In addition, ViON's experience with past projects closely aligns with the requirements of the State of West Virginia. The below table summarizes applicable projects, type of project, project goals, and how they were met.

Description / Location	Project Type	Project Goals	Description of Work	Project Manager and Contact Info
State of West Virginia Emergency Backup Solution	Firm-Fixed Price	Emergency purchase and implementation of additional Dell backup storage	ViON purchased equipment at-risk and implemented the solution successfully	Pat Mooney, Pat.Mooney@vion.com
State of Massachusetts	Firm-Fixed Price	Mainframe storage, backup, and preparing Customer for Cloud	ViON implemented the storage and backup solution giving customer cloud storage capability.	Pablo Gomez, Pablo.Gomez@vion.com
State of North Carolina	Firm-Fixed Price	Implement and integrate enterprise storage into NC environment (including network, authentication, replication, and knowledge transfer)	ViON implemented and integrated enterprise storage into environment, performed knowledge transfer and ongoing support services.	Kim McCabe, Kimberly.McCabe@vion.com
Transportation Security Administration / Maryland & Colorado	Firm-Fixed Price	Required managed services for data analytics platform including	ViON delivered ongoing managed services for the	Pat Mooney, Pat.Mooney@vion.com

Description / Location	Project Type	Project Goals	Description of Work	Project Manager and Contact Info
		patches, security updates, etc. for both Development and Production environments.	infrastructure, both remotely and onsite maintaining security and compliance.	
State Street Global Advisors / Boston, MA	Firm-Fixed Price	Required ongoing remote managed services for storage and compute infrastructure	ViON delivered ongoing managed services for the infrastructure for firmware, hardware, and application layers.	Kim McCabe, Kimberly.McCabe@vion.com
US Patent and Trademark Office / Alexandria, VA	Firm-Fixed Price	Deliver efficient storage infrastructure and services in an as-a-Service contract	ViON delivered fixed price infrastructure with managed services improving efficiency and reducing outages.	Rusty Spohn, Rusty.Spohn@vion.com

Figure 20: ViON's Experience Summary

The below organization structure illustrates how ViON proposes to operate this contract with WVOT. While there is a single point of contact, WVOT will have access to the entire account team (identified in section 4.3.1.7) as well as the larger ViON Corporation to resolve any significant issues or challenges encountered.

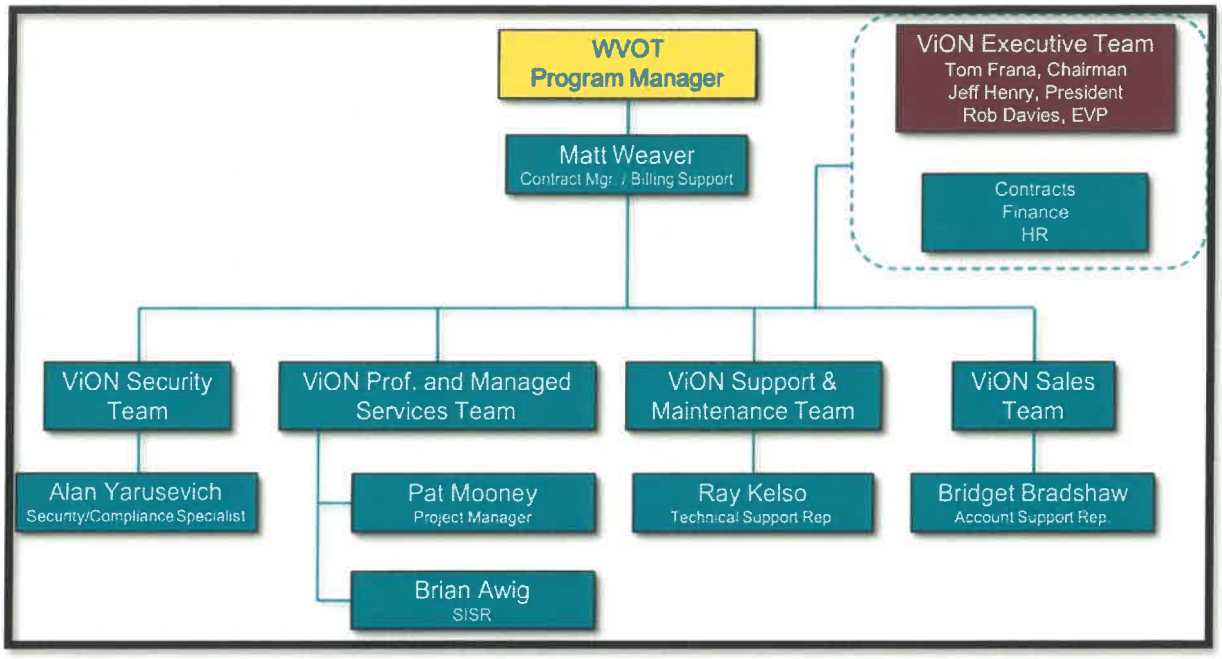


Figure 21: ViON Project Organizational Chart

4.3.1 Qualification and Experience Information: Vendor should describe in its proposal how it meets the desirable qualification and experience requirements listed below. Qualification and Experience Information: Vendor should describe in its proposal how it meets the desirable qualification and experience requirements listed below.

ViON meets and surpasses the desirable qualification and experience requirements listed below. ViON's history with on-premise, consumable infrastructure began with our customer, Defense Information Systems Agency (DISA), in response to DISA's desire to provision Storage Capacity as-a-Service. ViON gained vast experience and developed great skill over the course of this contract while deploying 60+ PB's of storage; 13,000 SAN Ports; 44 Tape Libraries with thousands of tape cartridges; and 4+ PB of backup data and 3+ PB of archive data. ViON's robustly configured storage solutions dynamically scaled up and down, maintaining consistent performance while DISA's infrastructure dramatically grew to meet the demands of data center consolidation and transformation efforts.

Fast forward 17 years, ViON currently has been awarded over ***$1.7 Billion in as-a-Service contracts*** (total pertains to contract ceilings). Each of these awarded contracts has been custom-tailored to meet the needs of the customer. ViON will use the experience and knowledge gained in supporting similar government customer programs in successfully executing and meeting the requirements associated with the WVOT service needs. Choosing a vendor with a proven track history in this market is vital to the success of WVOT's initiative as it sets the stage for the next decade of IT advancement and enablement for its agencies. ViON's experience and understanding of Infrastructure as-a-Service processes, operational contexts, technology, and engineering required to assure the highest degree of performance and availability is essential to lowering risk to the mission. Examples of ViON's experience, as listed below in the following sections, illustrate our ability to meet and exceed the demands of WVOT's strategic vision.

4.3.1.1 Vendor should specify previous experience in providing an on-premise infrastructure, preferably with government organizations. Vendor should include the scope of programs implemented. Vendor should also include any contacts at the specified entity who can be contacted for verification.

Please also see relevant experience as answered in Sections 4.3.1.5, 4.3.2.1, 4.3, and 4.3.2.2.

REFERENCE 1:

Program Title: SPARC Compatible Processor Capacity Services (SPARC)

Contracting Agency or Customer: Defense Information Systems Agency

Period of Performance: 2/5/2019 - 1/31/2029

Contract Ceiling: $329,586,627.00

Point of Contact: Program Manager, Mikell Spencer **Telephone:** (405) 855-8487

Scope: For this contract ViON is responsible for providing reliable, responsive, and cost effective processor "on-demand" infrastructure services for SPARC Compatible chipset processing capabilities for Defense Information Systems Agency (DISA) and/or DISA- approved locations, located in both the continental United States (CONUS) and outside of the continental United States (OCONUS). We provide DISA with a dynamically scalable processing capability utilizing an on-demand service approach for new equipment, that will readily adjust to changes in processing and throughput requirements (increases and decreases) and is priced on a utility ("as used") basis or tiered structure. As part of this process, ViON acquires, delivers, installs, configures, deinstalls, and provides the necessary hardware (which can include but is not limited to) cabinets/racks/cabling/cable management/PDUs hardware maintenance, operating system software, hypervisor solution, as well as, any other software required for our solution to operate, and services to support the processor infrastructure associated with this contract. The Government maintains day-to-day operational control and complete oversight responsibility of the processing environment. This operational control includes the installation of all software updates after the initial delivery. However, all operating system software, hypervisor solution, as well as, any other software required for ViON's solution to operate, including software maintenance and licensing are provided by ViON under this contract.

Relevance to WVOT's Mission: As noted above, ViON has the experience and capability to deliver, on-demand, all types of infrastructure (compute, storage, and networking) and services to WVOT with the ability to scale up or down as needed. DISA is a customer who continuously trusts and depends on ViON's aaS offering and continues to award business to ViON due to our knowledge, experience, and past-performance success.

REFERENCE 2:

Program Title: Justice Capacity Services Contract I & II

Contraction Agency or Customer: Department of Justice

Period of Performance: 9/2013 - 9/2024 (Recompete won in 9/2019)

Contract Ceiling: $24,000,000.00+ **(Justice Capacity Services Contract II)**

Point of Contact: Contracting Officer, Denise Fines; **Telephone:** (202) 305 9111

Scope: ViON, a subcontractor to prime contractor Alvarez and Associates, provides Storage-as-a-Service (SaaS) for the Department of Justice, Office (DOJ) of the CIO. DOJ's goal is to provide a dynamically scalable on-demand service approach that readily adjusts to changes in processing and throughput requirements (increase and decrease).

ViON acquires, installs, de-installs, configures and maintains all hardware/software for this contract while consistently meeting or exceeding the DOJ requirements and SLAs. With ViON's SaaS and program management, we replaced DOJ's EOL equipment with new Enterprise-class storage platforms and relocated its data center over 1,400 miles, experiencing minimum outage. Similarly, DOJ was able to relocate its DR site 250 miles and implemented a 3-datacenter replication solution to facilitate the relocations and meet DOJ's budget requirement.

In 2019, ViON was awarded the Justice Capacity Services Contract for the 2nd time. ViON personnel continues our long-term exacting standards of commitment to the DOJ's requirements. Our service and support personnel concentrate on building long-term relationships with the DOJ personnel so we may fully understand the DOJ's environment and the critical cycles of their business. As the DOJ's needs and expectations change over time, our personnel are there to ensure that each changing requirement is met with a quality solution. ViON's commitment to quality involves a process that unites our personnel, our service philosophy, and our technology.

Relevance to WVOT's mission: DOJ has recognized the value of the ViON aaS program and has determined all new infrastructure for DOJ will be procured in our as-a-Service model for IT hardware. As WVOT makes its transition to a consumable, OpEx model, WVOT will need ViON's program management experience and standards of excellence to ensure the entire journey (before and after transition) remains successful.

REFERENCE 3:

Program Title: Northwest Regional Data Center (NWRDC) Cloud Infrastructure

Contracting Agency or Customer: NWRDC at Florida State University

Period of Performance: 1/3/2018 - 1/3/2022

Contract Ceiling: $4,250,000.00

Point of Contact: Executive Director, Tim Brown; **Telephone:** (850) 245-3521

Scope:

The NWRDC acts as centralized IT for 94 public and not for profit entities in the state of Florida. NWRDC's goal was to address the need for select state agencies requiring a consumption model for the procurement of IT. ViON offers NWRDC flexible, on-demand storage in support of open systems and its Mainframe environment, allowing the customer to dynamically scale up and down as needed. ViON maintains a very close relationship with NWRDC to ensure the users of NWRDC's services are achieving their mission critical needs, a shared responsibility between NWRDC and ViON.

ViON has been a strategic supplier and partner in supporting the critical storage needs of the NWRDC for more than 7 years. Through ViON's enterprise IT engineering experience we have architected, implemented and created an aaS model in support of the State which was successfully recompeted and awarded to ViON once again in 2016.

Relevance to WVOT's Mission: The NWRDC Cloud Infrastructure program relates to WVOT's position as acting as the centralized IT for its agencies throughout the State. ViON has the experience and past performance success in creating an on-premise infrastructure consumption model as demonstrated with that of the State of Florida.

4.3.1.2 Vendor should describe its experience and process for supporting cybersecurity requirements associated with the components of this RFP.

ViON has been providing cyber-compliant solutions across Federal, State, and Local Government organizations. Our solutions are delivered and installed based on required security policies and compliance regulations of our customers. If our customers require specific security policies and access controls applied to the solution, they will be built into the solution and deployed to meet the customer's needs. If none are provided, we apply security best practices and access controls based on NIST SP 800-53 access controls to adhere to DISA Secure Requirements Guide (SRG)/Secure Technical Implementation Guide (STIG) criteria in order to harden the components of the solution.

ViON categorizes our cybersecurity process into two phases: cybersecurity deployment and cybersecurity operations. During the cybersecurity deployment phase, ViON works in compliance with our customer's existing cybersecurity policies and procedures to ensure the infrastructure being deployed into the customer environment is secure and compliant. ViON ***leverages customer approved images, security protocols, and other procedures to ensure compliance upon delivery of our solutions.*** For example: For ViON's customer at the DISA, we leverage STIG approved Operating System images and settings before installing the system in the DISA environment. Our team monitors and performs regular updates for both firmware and hardware as well as performing emergency security updates, as needed.

VION UTILIZES SCIENCELOGIC TO MONITOR FOR:

- ✓ Security Gaps
- ✓ Patch Updates with Revision Control
- ✓ Capacity and Threshold Alerts
- ✓ Pro-active Alerting

Once a system is installed and Ready for Use (RFU) in a customer environment, ViON transitions to the cybersecurity operations phase where ViON monitors and manages the cybersecurity posture of the infrastructure. ViON Managed Services for ViON-owned equipment (e.g. Dell VxBlock 1000 and IPDA 8300 with our proposed solution for WVOT) includes security updates within 72 hours if permitted, firmware updates, revision control, and OS updates. For WVOT-wide infrastructure, for one of our customers, Honeywell, ViON delivers managed network and cybersecurity services at secure Honeywell facilities. ViON engineers monitor for security updates and provide regularly scheduled patching and updating for their network infrastructure, while also performing health checks for their critical facility network infrastructure.

We also engage Ascolta, our wholly owned subsidiary with a focus on cybersecurity solutions and a proprietary solution, "Greenfield". Greenfield is a ready built security compliant platform designed to deploy security compliant images and systems immediately for specific customer environments. ViON, with Ascolta, can perform more extensive interviews and discovery around RMF and Security Access Controls with outcomes of providing full guidance and documentation for certifications, accreditation, and compliance.

4.3.1.3 Vendor should describe its experience and capabilities in supporting their customers during compliance audits when the vendor-supplied solution is within the scope of audit.

ViON works closely with customers during and after installation and implementation to ensure proper cybersecurity requirements are met. We review the customer's Risk Management and Audit Management Plans and (where these exist) and work closely with the IT department and CISO/CSO/ISO to **ensure proper cybersecurity and audit compliance**. If there is an audit regarding a component of a ViON solution, it is in-scope and subject to procedures under the customer's Audit Management Plan (AMP) provided the customer has physical control of the solution. If the solution is hosted remotely by ViON, or other cloud provider ViON is offering, provided services are in-scope and subject to each customer's adopted AMP.

The Department of Commerce USPTO SIMS contract is an example of ViON's experience in supporting its customers in compliance efforts. SIMS is required to complete annual continuous monitoring and assessment activities. The system must follow the guidance described in the NIST SP 800-37 (Rev 1), "Guide for Applying the Risk Management Framework to Federal Information Systems" and NIST SP 800-53 (Rev 4), "Security and Privacy Controls for Federal Information Systems and Organizations. ViON delivers the objective by **conducting an information security program review and comprehensive assessment using artifacts that already exist where possible, structured interviews, and direct observations** to benchmark the ViON information security program against the NIST SP 800-53 control set identified by the organization.

4.3.1.4 Vendor should describe its policies and procedures for conducting sub-contractor assurance, validating both the capability of the vendor to fulfill contracted responsibilities and adhere to all applicable security & privacy policies.

ViON and our assigned Project Manager will oversee any subcontractors performing work on behalf of WVOT. The ViON PM is the primary point of contact for our subcontractor management, but will also leverage other functions within ViON including, but not limited to the Contracts Department, Finance, IT, and Security. The ViON PM will manage the subcontractors by:

- Validating the subcontractor's ability to perform the Service required
- Ensuring the IT Service is delivered in a seamless manner
- Managing the overall activity of the subcontractor staff to ensure cost, schedule, and performance meet service expectations and requirements
- Delivering services in compliance with agreed upon SLAs
- Ensuring the flow downs, including background investigation and certification requirements, of all contractual documents between WVOT and ViON are included in any subcontract agreements with subcontractors
- Ensuring adherence to WVOT policies and procedures including all applicable policies and standards issued by the WV CTO

In addition, ViON has and will continue to aggressively seek opportunities to leverage small businesses while being mindful of risk and cost concerns for customers. ViON's commitment begins first with meeting customer needs in an operationally sound and cost-effective manner.

ViON is committed to the small business subcontractors we use in support of our customer contracts and continue to provide meaningful roles for these and other small business concerns over the life of the contract as the work evolves and where we can engage small businesses effectively.

ViON's Subcontract Administrator will maintain responsibility for effective participation of small business concerns, ensure all customer contract and subcontract requirements are met, and provide timely and responsive reporting and support for the customer. The ViON Subcontractor Administrator will work with ViON's PMO to assist small businesses during their execution of efforts on the customer contract. Efforts include the following:

- Work with the PMO and the customer Small Business Program Offices to qualify small businesses which can support the customer environment.
- Provide adequate and timely consideration of the potentials of SB, SDVOSB, HUBZone, SDB and WOSB concerns in all make-or-buy decisions.
- Counsel and discuss subcontracting opportunities with representatives of small business firms.
- Confirm that a subcontractor representing itself as a small business concern is identified as a certified small business and appropriate socio-economic category concern by accessing the System for Award and Management (SAM) database or by contacting Small Business Administration (SBA).

ViON will be diligent about ensuring prompt subcontractor reporting, accurate subcontractor business certifications, and quick and effective responses to any problems, issues, or concerns. ViON will also support WVOT, at any time, with ad hoc subcontract inquiries and discussions.

4.3.1.5 Vendor should list all references and/or examples for previous experiences in providing on-premise infrastructure services. Vendor should include any applicable documentation pertaining to the services outlined within this solicitation.

Please also see relevant experience as answered in Sections 4.3.1.1, 4.3.1.2, 4.3.1.3, 4.3.2.1, and 4.3.2.2.

REFERENCE 1:

Program Title: Storage Infrastructure Managed Services (SIMS)

Contracting Agency or Customer: Department of Commerce, United States Patent and Trademark Office

Period of Performance: 08/01/2014 – 11/30/2021 (Option Years from 2/1/2015 – 11/30/2021)

Contract Ceiling: $165,790,191.00

Point of Contact: Program Manager, Ian Neil, **Telephone:** (571) 272 5075

SCOPE: The USPTO SIMS contract was awarded to ViON with the goal of transferring the ownership, design, engineering, support, and maintenance of the agency's storage to an on-premises, Contractor-owned infrastructure. Our managed services model provides USPTO a vendor-agnostic just-in-time storage approach to the agency's storage technology needs. In addition to daily management of storage, ViON's Managed Services provides proof-of-concepts,

evaluations, assessments, vendor management, and market research. On this contract, ViON currently manages 7.6PB of storage servicing 12,000 hosts. This consists of both physical and virtual servers achieving an aggregate throughput of 250 GB/s (2,000 Gb/s). 99% of I/O is below 4/ms response time.

The primary measurements of ViON performance are availability/uptime and delivery/ provisioning time. The SIMS contract has a 100 percent availability requirement with associated penalties in the form of liquidated damages if there is an outage caused by ViON personnel or the ViON-provided infrastructure. ViON has incurred zero financial penalties due to infrastructure outages. The SIMS contract also has delivery SLAs from 3 to 10 business days (depending on the size of the storage request). This time is tracked from order placement up to ViON presenting usable storage to USPTO. ViON measures the time-to-completion for each provisioning request and routinely exceeds the contractual requirements, with the average request being completed in only a single business day (absent any customer-driven delays).

Detailed Technical Scope of Work: ViON provides USPTO with two independent SAN fabrics; SIMS proper and Legacy. Each SAN fabric also consists of two redundant SANs. The SIMS proper SAN consists of 36 SAN switches (Core and Edge) and 3,456 ports fronting 5PBs of Dell/EMC Enterprise block, NAS and object storage. The Legacy SAN fabric consists of 10 SAN switches (Core and Edge) and 2,568 ports fronting 2.6PBs of Dell/EMC Enterprise and mid-tier block and NAS storage. Each of these SAN fabrics support hundreds of both virtual and physical Windows, Linux, Solaris, and HPUX operating systems that are dual pathed within their respective SAN Fabric. By using the OEMs best practices, data throughput is in excess of 250 GB/s with less than 4ms response times to the multi-tenant environment.

ViON also provides storage to the Backup team needed to perform disk to disk to tape backups. We provide 4PB of Block, NAS and Object based storage and replicate 3.6 PB of Block, NAS, and Object asynchronously to a remote data center for BCDR purposes.

Regarding business insights, ViON provides a suite of Virtual Instruments (VI) capabilities with TAP and PROBE systems for capturing fiber channel traffic at select points in the architecture. It also includes Virtual Wisdom servers and software for data analysis and real-time monitoring. We use the VI fiber analysis tools to analyze and troubleshoot the FC SAN and gather metrics. This gives us the knowledge and capability to adjust resources and fine tune the fiber channel environment for performance gains and resiliency. It gives us the insight and intelligence to make architectural changes when needed. ViON also employs EMC ViPR and NetApp OCI to monitor the health and performance of the infrastructure allowing ViON to exceed speed and IOP SLAs.

Relevance to WVOT's Mission: While ViON has proven its capabilities in providing on-premise infrastructure, the USPTO SIMS contract is an example of our ability to manage the entire data center operation if desired by the customer (or any scope of services in between). There are six (6) 1-year options on this contract, and together, the USPTO and ViON chose to renew each option year as a result of ViON's performance. ViON's continued success on this contract of meeting stringent SLAs (based on 100 percent availability) proves our ability to meet and exceed any on-premise infrastructure service requests in support of WVOT's needs.

REFERENCE 2:

Program Title: Defense Information Systems Agency (DISA) ADVANCED INTERACTIVE EXECUTIVE (AIX) II & III

Contracting Agency or Customer: Defense Information Systems Agency

Period of Performance: Five (5) Year Base (10/12/12 through 10/12/17), with three (3) 1-year Options to October 12th, 2020

Contract Ceiling: $170,898,036.00

Point of Contact: Program Manager, Justin Stubblefield; **Telephone:** (405) 739-3736

SCOPE: In 2012, ViON won DISA's competitively awarded Capacity Services System P Contract for the second time. Based partially on our outstanding performance during our work on AIX II, ViON was recently awarded the competitive re-compete of this contract (AIX III) and is currently on-going. For DISA, ViON performs provisioning IBM AIX Processor Capacity as a Service. Using ViON's Capacity Call Order process, ViON has processed Call Orders for increases *and* decreases in the following classes of Processor Services: Mid-Tier Processor Services; Enterprise-Tier Processor Services; Enterprise Hardware Management Consoles; high-performance I/O interfaces, Power HA Software, Professional Services, as well as advanced technical support, documentation and performance analysis.

ViON has pioneered many of the innovative processes needed for successful implementation of capacity-based IT services. These innovations include web-based, automated call order processing, automated government approval workflow, the "RFU" process for acceptance and billing management, and detailed monthly invoicing of capacity-based orders (both new and continuing). ViON gained extensive experience and developed skills over the course of this contract while deploying and maintaining 30 advanced IBM AIX Power servers; redundant multi-site management infrastructures, and High Availability software ensuring availability as high as 100%. ViON also provides the engineering and knowledge transfer expertise DISA uses to build and support enterprise AIX processing capabilities.

ViON regularly attends meetings in Denver, Ogden, Oklahoma City, and San Antonio. ViON has hosted DISA periodic reviews from our HQ in Herndon, Virginia - attended by both DISA and Mission Partner executives.

Relevance to WVOT's Mission: ViON's PMO has used a unique acquisition model achieving capacity changes (increases *and* decreases) while controlling all costs in support of DISA. DISA has been utilizing this web-based Call Order processing system since 2011 - now known as the VCSP. The VCSP will be tailored for WVOT to create a defined work-flow process for WVOT's call orders.

To further explain the VSCP, the portal acts as the hub for all Call Order communications with DISA. A user logs into the VCSP with their credentials. A new Call Order is created by selecting the type of service desired, the location where the service is to be provided, the security classification (SIPR or NIPR), and then adding other info such as technical or contracting contact. Next, one "builds" the requested service, selecting from drop-down menus. When finished, the Call Order is saved as a draft or presented to ViON for validation, acceptance, and processing. As orders are created, they are automatically forwarded to responsible parties for approval and authorization. This process is performed by the VCSP, using conventional e-mail. This ensures funds and authority are available and consistent with the services ordered.

Throughout the call order process, the VCSP automatically sends informational emails to the DISA team, following a DISA defined work-flow process. Details of Call Orders can be examined at any time in the process.

ViON's PMO demonstrates our ability to provide large-scale program management and to successfully execute on a wide range of IT solutions that will be tailored to WVOT's specific needs.

4.3.1.6 Vendor's should hire staff that have the appropriate background, education, and experience to address all tiers and services of the contract.

Using the ViON Staffing Plan described below, ViON's Operations Management team shall ensure that the staff hired to satisfy the services associated with the WVOT proposal are qualified, certified and trained on a regular basis to ensure they are best adapted to meet the currently required and evolving needs of the customer.

STAFFING APPROACH

Our overall approach to staffing has a key goal – to provide a workforce in support of the WVOT contract of highly qualified personnel in specific labor categories. Supervisory positions will be filled with experienced personnel who are charged with providing the leadership, direction, functional understanding, control, and accountability needed to ensure that all areas are supported in keeping with the requirements.

This approach leads to three areas of focus to produce quality outcomes for WVOT, these areas are **Recruiting, Training and Retention**. ViON's Human Resources (HR) Division, work closely with Program Managers to select high quality staff for specific requirements. We find quality candidates via a diverse program that leverages referral bonuses, professional organizations and contacts, advertisements, resume services and an internally managed database. In doing this we a four-phase interview process: Resume Review, Interview, Background Security Check, and Offer.

At ViON, recruiting and placement is a function of the HR Division, working closely with ViON's Program Account Manager to select high quality professionals. Our HR staff is committed to affirmative action and equal employment opportunity. Both the HR staff and the Program Account Manager conduct interviews. Other company officials may also become involved in the selection process if the position to be filled is particularly sensitive. The final authority for hiring is a collective decision involving both the requisitioning unit and the HR Division.

To ensure that our new hires are of the **highest caliber, we conduct in-depth reference checks** for all positions. ViON's record of success is directly attributable to its HR policies that are based on a commitment to its employees and the principles of equal employment opportunity. These commitments are reflected in our respect for the individual, insistence on quality, and reward based on performance. Our decisions regarding recruitment, hiring, training, promotion, retention, and reward of individuals are made without bias or prejudice.

The success of our staffing approach is attested by, beginning in 2008, ViON being consistently recognized as a Best Place to Work receiving awards from The Washington Post, The Washington Business Journal, and Washingtonian Magazine. Additionally, ViON has been

named ***Washington Business Journal's "One of the top privately-held companies in Washington DC".***

ViON encourages promotion from within our own organization whenever job opportunities become available. These positions are announced through our weekly newsletter, ViON Shout Out. All project managers and liaisons are provided written Job Vacancies, which are posted in a central location at each project site. ViON practices proactive recruiting of personnel to meet unique job requirements. As an Affirmative Action employer, ViON provides job vacancy announcements to several organizations throughout the Washington Metropolitan Area that locate qualified minorities, women, veterans, and workers with disabilities. Our recruiting techniques include:

- **Professional Contacts:** ViON managers and staff maintain contacts throughout the technical and professional community
- **Professional Organizations:** ViON has relationships with professional organizations, employment organizations, and college/university placement offices
- **Referral Bonus Program:** ViON promotes employee referrals through its Referral Bonus program
- **Advertisements:** ViON advertises in a variety of newspapers, job lines, and technical and professional magazines
- **Internally Managed Recruitment Database.** ViON maintains its own internally managed database of professional applicants in all areas of information technology

ViON believes that challenging its employees and rewarding strong performers leads to enhanced performance, and ultimately, to client satisfaction. ViON is committed to rewarding its employees for loyalty and performance, and to nurturing the on-going relationship between the company and its clients.

Corporate Structure

ViON's proposed organization and structure is the product of more than 38 years of successful implementation experience. We employ best practices and leverage the lessons learned from years spent supporting Federal, State, and Local agencies with similar needs. ViON has the ***administrative, financial, management and partner resources in place to provide best-in-class*** support and services to the WVOT. As detailed in this proposal, our team has significant experience at other Federal agencies supporting the same or similar requirements that are detailed in this solicitation. Our proposed organizational structure for a resulting WVOT contract (as outlined in the graphic below) includes a dedicated PMO with Support Engineers, Field Engineers, our Consumption-based acquisition model as well as Professional and Managed Services. This structure will include ViON personnel but will also leverage our broad partner ecosystem on an as-needed basis. Our team will work with existing WVOT staff and vendors as necessary to ensure both a smooth transition to the contract as well as ongoing services during the life of the contract.

Managed Services

ViON will deliver onsite and where allowed, remote, Managed Services to support the ViON solution. ViON's Managed Services teams are U.S.-based, and most team members hold Federal

and DoD clearances. Updates that impact security vulnerabilities will be monitored and applied on an ongoing basis, while patches, upgrades, and firmware updates will be applied on an annual basis on regularly intervals in coordination with the WVOT. ViON's Managed Services will deliver operations and maintenance services including:

- Operating system security patches
- Operating system upgrades (minor releases only)
- Hardware firmware upgrades and
- Addressing any identified security vulnerabilities

ViON's Managed Services will maintain a similar environment to the WVOT in our Herndon, VA lab. This environment will serve as the initial test system for all updates, changes, and upgrades to validate the process and ensure the updates or changes do not negatively impact the operation of the system. The ViON Managed Services team will then coordinate any updates with WVOT before implementing patches and updates to the solution. Updates will be performed remotely, when/if permitted by WVOT protocols, and onsite, for updates that require physical presence or to comply with State security requirements.

Included as part of ViON's Managed Services are:

1. 24x7x365 Monitor and Event Management to include the following for the solution hardware:
   - System Health Check
   - System Utilization
   - Monitoring of the Platform Hardware utilizing OEM alerting capabilities including OEM escalation and resolution notification
   - Major Alerts and Warnings
   - OEM Escalation
2. Maintain Annual Patching and Updating for:
   - Operating System Patching (CentOS)
   - Operating System Hot Fixes (CentOS)
   - Nexus Operating System Patching
   - Firmware Upgrades on Servers and Network gear
3. Annual Reporting to include:
   - Overall device health status and patch level analysis report
4. As part of this Managed Service, ViON will:
   - Validate manufacturer patches and firmware for release and implementation prior to placing into customer production systems
   - Conduct Annual Health Check for each device
   - Provide Annual Patch Management

- Provide Annual Health Status Report
- Coordinate all Hardware break fix with OEM
- Account Manager to review Health Check Reports, Support Cases, and overall satisfaction analysis

5. Scope Boundaries:
   - All services will be provided remotely
   - This service will be limited to Operating System/Application Patching and Hot fixes for the servers and Nexus Operating System patching for the Switches
   - These Support and Managed Services do not include System/OS Administration or Application Administration
   - These services do not include major OS updates or version upgrades. Should the Customer want to implement these, ViON can provide a price under the cover of a separate Statement of Work
   - All patches will be reviewed and applied Annually
   - ViON will provide break/fix monitoring services of all Platform Hardware and replacement coordination
   - ViON will provide application monitoring services followed by customer notification per ViON Event Response Matrix
   - Professional Services: These services are outside of the scope of this Managed Services engagement. A separate Statement of Work with a detailed scope of services along with pricing will be required for all Professional Services outside the scope of Managed Services. Professional Services are typically project-based and not included in a managed offering

Hiring/Retention Strategies

Candidate Screening and Hiring Process. ViON will use a four-phase approach to screening candidates for work on the WVOT contract. The four phases are as follows:

Phase I: Resume Review. In conjunction with the ViON PMO's staffing resource, applicants for employment are identified. Then our Program Account Manager will thoroughly compare the candidate's résumé to the labor category to which they are proposed. Inquiries may be initiated to gather more information regarding the applicant's technical qualifications in relation a specific project. Each applicant will be evaluated on a point basis, from 1-10 (1 indicating not qualified, and 10 indicating highly qualified). All applicants who score between 7 and 10 will be contacted for an interview.

Phase II: Interview. Applicants identified as technically qualified in Phase I will be contacted by our HR Director to schedule an interview. When the applicant arrives for the interview, they are asked to complete our employment application. The HR Director reviews the employment application for completeness and conducts the initial employment interview. The Program Account Manager may conduct their interview at that time or wait to examine the results of the HR Director's interview. It is during this phase that personal security checks are discussed if

required for employment. The applicant is also advised that any drug use during the last five years may disqualify them from employment. Follow-on interviews may be required to further evaluate technical skills and personal demeanor, to assure the "fit" between the applicant, the company, and the client. The interviewer will thoroughly document the interview. (Any other interviewers will also be required to document their interviews with the candidate, as well.) Finally, applicants who meet the technical and professional requirements for the position will have their résumé made available for client review.

Phase III: Background Security Forms Completion/Review. Applicants who successfully reach Phase III are in the final phase of processing, during which background security forms must be completed. At that point, the candidate is reminded that they must be able to pass any required background security investigation to be employed in the intended position. They will be directed to respond to all the questions to the best of their ability. Any questions requiring clarification because "yes" was entered must be provided in detail. Once all security forms are completed, they will be forwarded to ViON's Security Officer for processing.

Phase IV: Offer Letter/Start Date. Once the security forms are completed and provided the client will allow the candidate to work on the contract in a provisional status, the candidate is given an Offer Letter, identifying his/her title, start date, salary, benefits, and any other terms of employment. The candidate is required to sign and return the offer letter, signifying acceptance of the offer, the agreed-upon start date, and ViON's stated terms of employment.

TRAINING

ViON thoroughly understands that contract performance is dependent on the quality of the staff working on the contract, and that employees must maintain an awareness and proficiency in technological advances in information technology.

ViON considers training of staff an essential and normal part of day-to-day business practices. Consequently, we encourage all employees to further develop their professional skills through continual training and refresher courses. ViON has established policies and procedures for employees who wish to take job-related classes or attend educational seminars, and strongly encourage members of the contract team to take advantage of this educational assistance. Specifically, ViON provides employees with reimbursement of 100% of tuition, registration, and required fees paid directly to an accredited institution for educational expenses.

RETENTION

ViON has developed a comprehensive program to promote the benefits of a long-term employer/employee relationship. This relationship enables us to maintain required staffing levels, and is supported by several distinct components, which include:

Competitive Salaries. We provide our employees direct compensation commensurate with their demonstrated skills, experience, and seniority. ViON maintains its active awareness of current marketplace compensation levels through published, empirical, and other informal means.

Excellent Working Environment. ViON engages professionals who have demonstrated proficiency and self-sufficiency. We nurture those attributes in a corporate environment that is relatively unstructured and devoid of undue policy and restrictions. All staff are treated with professional respect, have immediate, informal access to every company official and other

employees, and are encouraged to act on their own initiative for the common good of the company.

Comprehensive Benefits. ViON provides a highly competitive benefits package that recognizes the diverse needs and goals of its employees. The project includes health care, dental care, life insurance, long-term disability, and a retirement package. Additional benefits are available through vacation and sick leave, paid holidays, direct deposit, and employee discount projects. ViON's benefit package is continually reviewed, and improvements are made whenever possible.

- **Career Development Projects**. Assisting employees attain career goals is an essential element of ViON's corporate culture, contributing to increased morale, and employee retention.
- **Management Training:** ViON managers are supported and provided training to ensure that employees will be assisted appropriately with career goals
- **Promotions from Within:** When positions become available, existing employees who meet position qualifications are considered before external candidates. To ensure customer satisfaction, however, the best overall (internal or external) candidate is always selected
- **Tuition Reimbursement:** Employees are encouraged to participate in continuing education and training projects. Tuition reimbursement is available for all employees who are interested in pursuing additional education or training
- **Training Projects:** ViON employees are given the opportunity to participate in additional training, both formal and on-the-job, in technical and managerial areas that contribute to improved work-related performance. ViON also supports technical refreshment training for its on-site staff to achieve specific skills required to satisfy customer upgrades or enhancements
- **Performance Evaluations and Career Counseling:** Each ViON employee receives a performance evaluation, at least annually. The review process focuses on activities they may undertake to obtain their career goals. Information and on-going communications about work performance and development needs continue throughout the review cycle. In addition, through an open-door HR policy, employees are encouraged to discuss their career goals at any time
- **Employee Relation Projects:** For all members of ViON's management team, employee relations, and communications within our organization are a vital aspect of the company. ViON believes that "internal communications are the key to the success of our business." To ensure that our employee relations remain in proper focus and that lines of communication are kept open, ViON has developed a host of employee communications alternatives. ViON encourages all employees, at all levels, to take advantage of the many opportunities for communication within ViON. The opportunities include:
    - **ViON Shout Out:** A ViON newsletter about company business and employee activities is published weekly and distributed to all employees. Members of the ViON family are encouraged to participate in newsletter development

- **ViON Beneficial Suggestion Project:** Employees are encouraged to offer constructive suggestions for improvement to operating practices or policies at any time. Implemented suggestions are recognized in the company newsletter and can warrant monetary awards
- **Benefit Briefings and Meetings:** Employees are kept up to date on improvements and changes to ViON's benefits package
- **Employee Activities:** ViON sponsors employee social activities throughout the year to provide an opportunity for employees and their families to meet each other outside the business environment

ViON believes that challenging its employees and rewarding strong performers leads to enhanced performance, and ultimately, to client satisfaction. ViON is committed to rewarding its employees for loyalty and performance, and to nurturing the on-going relationship between the company and its clients. ***ViON management will meet with the WVOT contract support staff on a regular basis to ensure that service requirements are being met in timely and orderly fashion, identify staff needs, and respond to these needs to ensure that there is no disruption of services to the WVOT customer.***

In order to ensure that the contract is properly staffed in order to address all tiers and services of the contract, ViON will ensure that its staff has the proper background, education, and experience to enable a successful contract. In addition to hiring, ViON also focuses on training, performance reviews and retention as part of its overall approach to providing successful candidates and ensuring customer satisfaction and contract success. ViON's employees have an outstanding track record of training and advanced trade certification. ViON provides incentives for employees who attain additional certifications and funds other continuing education activities via bonuses and promotions. To support additional training, ViON maintains two 1500sqft raised floor datacenter labs with samples of all advanced products and technologies, and three 500sqft classrooms. This high-tech classroom is available to our staff, partners, and customers on a 7 day a week basis. For each team member on the contract, the Program Manager will develop job descriptions and task assignments and other responsibilities as needed to fulfill the contractual requirements. The Program Manager will review with each team member their assigned work activities at the onset of the project and will communicate all expectations of work to be performed. The Program Manager will meet the Operations Manager (OM) and review each team member's performance on a quarterly basis. The review will consider the accuracy, speed, and effectiveness of each team member's performance. Corrective action if necessary, in terms of specific guidance or in extreme cases, human resources involvement, will follow these reviews. The OM will conduct monthly reviews of individual employees' performance.

4.3.1.7 The State desires an Account Team (including Account Support Representative, Technical Support Representative, Solution Implementation Support Representative, Contract Manager, Billing Support Representative, Security/Compliance Specialist, and Project Manager) for the winning solution and life of the contract. Vendor should describe in detail the responsibilities of key roles and staffs experience in working in these roles.

The list below represents individuals who participate and lead ViON's aaS Programs from an executive level, and who will support the WVOT Account Team.

Executive Team - Name	WVOT Contract Role
Tom Frana	President and CEO
Rob Davies	Executive Vice President, Operations
John Pyne	Vice President, Capacity Services
Carl Fulp	Chief Technology Officer
Ray Kelso	System Engineering Manager
Joe Shoemaker	Customer Services Manager

Figure 22: ViON's Executive Support Team

The table below represents the Account Team that will be dedicated to the State for the life of the contract.

WVOT Program Account Role	Proposed Team Members
Account Support Representative	Bridget Bradshaw
Technical Support Representative	Ray Kelso
Solution Implementation Support Representative	Brian Awig
Contract Manager	Matt Weaver
Billing Support Representative	Matt Weaver
Security/Compliance Specialist	Alan Yarusevich
Project Manager	Pat Mooney

Figure 23: ViON's Account Team for West Virginia

Account Support Representative – Bridget Bradshaw: The role of the Account Support Representative is to be the main point of contact for the WVOT during the term of the contract. The Account Support Representative responsibilities will include (but are not limited to) aiding in the sales cycle for all transactions on this contract, providing professional after-sales support, remaining in regular contact with WVOT to understand and meet their needs, and resolving issues to WVOT's satisfaction. Bridget Bradshaw has 17 years of sales and customer service-related experience. She was also the Account Support Rep for WVOT's IDPA Emergency Procurement and the implementation, training, and residency that followed over the past year. She is familiar with WVOT policies and has maintained a professional and respected rapport with the WVOT staff.

Technical Support Representative – Ray Kelso: ViON's Technical Support Representative provides a single point of contact for all support service and break fix activities or escalations on WVOT aaS systems components. With over 38 years working in all areas of Support and Services including 13+ years on aaS programs Ray Kelso – ViON Sr. Director of Customer Support and Maintenance will provide the level of experience and communication for WVOT that is based on ViON's long history of customer intimacy model. Ray has been involved at many levels of service, support, and management on customers including DoD, Intel, State Local Gov't, DOJ, DOC, DOE, as well as numerous commercial accounts. With a background including hardware break fix, network WAN/LAN implementation and troubleshooting, storage performance and replication tuning, Unix/Solaris scripting, etc. his broad knowledge of all components of computing allow for quick understanding of customer environments. As the TSR for WVOT, Ray will work with his organization and OEM partners to monitor WVOT support services for successful practices to maintain customer satisfaction. TSR will also monitor WVOT activities and emerging trends to proactively address any concerns or actions before they create

negative impacts to WVOT environments or end user perceptions. ViON practices around support are to own the issue until resolved. In cases where the issue does not appear to be caused by the ViON provided solution Ray will stay engaged until the issue is resolved or the customer disengages ViON.

Solution Implementation Support Representative – Brian Awig: ViON's Solution Implementation Support Representative, Brian Awig, will be the main point of contact for WVOT regarding the implementation of the proposed technical hardware and software. Brian will oversee the development of configurations that support WVOT business processes, the execution of the delivery and implementation plan, and oversee the testing and troubleshooting of the final system set-ups. Additionally, Brian will coordinate training and end-user support during and after the implementation process. Brian has over 13 years of experience leading large scale technical teams encompassing IT infrastructure, IT support services, Help Desk, Data Centers, Networks, Telecommunications, E-mail, and Information Security. He has proven experience in consolidations of operations to improve efficiencies and raise the level of customer service across the IT organization.

Contract Manager & Billing Support Representative – Matt Weaver: ViON's Contract Manager & Billing Support Representative will be the interface to WVOT for all programmatic and billing related matters. His responsibilities include (but are not limited to) development, delivery and maintenance of all required contract documentation and deliverables, contract fund status reporting, and monthly billing. Matt will work with ViON's Project Manager in overseeing the technical delivery of services to WVOT. Matthew Weaver is a PMP certified professional with over 19 years of software development and engineering experience in support of DOD Intelligence, Surveillance, and Reconnaissance (ISR) systems and Commercial Customers. Experience includes management of large and small scale projects and programs. Areas of focus have included requirements analysis and definition, software design and development, project planning and execution, and testing and deploying of software and hardware systems. He has successfully managed numerous software development and integration projects throughout his career. He is an active member of the Project Management Institute (PMI) in good standing. He holds a Bachelor of Science in Computer Science and an Associates of Science in Engineering Management. He currently manages ViON's Cloud Services Platform (VCSP).

Project Manager – Patrick Mooney: PMP, PMI-ACP, ITIL and Trained Facilitator – ViON's Project Manager will coordinate with WVOT Project Manager and all appropriate Team members throughout phase of the project and throughout the life of the contract to make sure the ViON solution is delivered installed and operational in accordance with these solicitation requirements. This coordination will be done in a manner to minimize disruption to the WVOT daily and other routine operational considerations. ViON will try to minimize impact on the WVOT personnel and will strive to cooperate with their needs to the maximum extent possible while delivering this solution for WVOT. Pat Mooney was the ViON Project Manager for the IDPA Emergency Procurement and is familiar with WVOT site and policies. Pat has 30 + years of Project Management and Contract Management, negotiation, and conflict resolution training. Additionally, Pat has solid interpersonal and communications skills, coupled with effective leadership Capabilities.

Security/Compliance Specialist – Alan Yarusevich: Manages internal projects and programs ensuring proper adherence to NIST SP 800-53 access controls for delivered systems ensuring cyber-hardened solutions are deployed adhering to compliance mandates in critical environments based on DISA SRG/STIG benchmarks. He works closely with IT staff and ViON professional services to ensure delivery of solutions are conducive to NIST SP 800-37 Risk Management Frameworks (RMF) and any defined exceptions are fully documented for the customer's security office. If the state provided specific deliverable compliance guidelines, Alan ensures compliance is achieved for final deployed solutions. If POA&Ms are required, he works with professional services to identify, document, implement the appropriate milestones for continuous monitoring and any operational exceptions to meet mission guidelines. Alan has 20+ years of operational, secured federal agency systems security with CISSP in process.

4.3.2 Mandatory Qualification/Experience Requirements - The following mandatory qualification/experience requirements must be met by the Vendor as a part of its submitted proposal. Vendor should describe how it meets the mandatory requirements and include any areas where it exceeds the mandatory requirements. Failure to comply with mandatory requirements will lead to disqualification, but areas where the mandatory requirements are exceeded will be included in technical scores where appropriate. The mandatory qualifications/experience requirements are listed below.

ViON will meet and/or exceed the WVOT mandatory qualification/experience requirements as defined in this solicitation. ViON understands the compliance parameters and implications associated with the failure to comply with the WVOT defined parameters. Our plans to meet these requirements are further described in the following sections.

4.3.2.1 Vendor must have provided on-premise infrastructure hardware and/or services within an organization of similar size and complexity or larger.

ViON describes in the table below our capabilities and experience in providing on-premise infrastructure hardware and/or services within similar size and complexity or larger. **Comprehensively, ViON's on-going, aaS contract ceiling awards total over $900,000,000.00**

Customer (Contract number)	Award Date	End Date	Contract Ceiling	Place of Performance	Point of Contact	Locations Supported
Virginia National Guard Contract# UVA1242906	2/1/2019	1/31/2019	$1,105,110.00	Blackstone, VA Staunton, VA	Michael Moran 434-298-6148	1
Blue Cross and Blue Shield of North Carolina Contract# SC-0001189 and SC-001596	4/1/2018	6/30/2020	$3,072,692.47	Durham, NC	Peter Bojovic 919-765-3956	1
Virtustream Contract# 7100121195 & 7100121194	6/1/2018	3/31/2020	$134,600.00	Las Vegas, NV and Sterling, VA	Mike Evans 916-425-3947	2
USPTO Contract# DOC44PAPT1409026	12/1/2016	11/30/2021	$165,790,191.00	Alexandria, VA and Boyers, PA	Ian Neil 571-222-5075	2 CONUS
NAVWAR Contract# N00039-17-D-0003	3/9/2017	3/8/2024	$49,990,000.00	Charleston SC, Millington TN, San Diego CA, Indianapolis IN, Kansas City KS, New Orleans LA	David Edwards 543-284-3156	12 data centers CONUS
State of NC – DEQ	5/1/2019	4/30/2024	$296,514.00	Raleigh, NC	Susan Penman 919-707-8929	1

Customer (Contract number)	Award Date	End Date	Contract Ceiling	Place of Performance	Point of Contact	Locations Supported
Contract # 204X						
State of NC – DIT Contract# 204X	6/1/2018	5/31/2023	$2,580,858.00	Raleigh, NC	Keith Aiken 919-754-6357	1
FSU -NWRDC Contract# ITN 5835-A	1/3/2018	1/2/2022	$4,250,000.00	Tallahassee, FL and Atlanta, GA	Geoff Burda 850-645-3559	2
US Senate – Archive Contract# 2017-C-027	9/13/2017	12/31/2022	$428,064.00	Trenton, NJ, Manassas, VA and Washington, DC	Richard Garrison 202-228-8938	3
Customs and Border Patrol – HCI Contract# 101225	9/29/2017	9/28/2020	$608,668.40	Clarksville, VA	Michael McFetridge 703-921-7058	1
DISA - Public Cloud Contract# ECPO3257	9/28/2017	9/28/2020	$1,341,897.89	FT Mead, MD	Betty Burris 618-229-9291	1
Army Altess Contract# 1077570	9/27/2017	9/28/2022	$750,691.52	Radford, VA	Andy Hendrickson 540-731-3487	1

Customer (Contract number)	Award Date	End Date	Contract Ceiling	Place of Performance	Point of Contact	Locations Supported
GDIT Contract# PUR32691	7/31/2018	7/31/2023	$324,089.00	Towson,MD and Carlstadt, NJ	Alfonso Washington alfonso.washington@gdit.com	2
US Senate - Virtual Infrastructure Contract# 2018-C066	11/1/2018	10/31/2023	$2,411,670.74	Trenton, NJ, Manassas, VA and Washington, DC	Richard Garrison 202-228-8938	3
DISA -SPARC Contract# HC108419D0001	2/5/2019	1/31/2029	$329,586,627.00	St. Louis, MO, San Antonio, TX, Oklahoma City, OK, Hill AFB, UT, Montgomery, AL, Columbus, OH, FT. Meade, MD, Mechanicsburg, PA	Mikell Spencer 405-855-8487	18 data centers globally
DISA-AIX III Contract# HC102818D0044	4/13/2018	9/30/2028	$170,898,036.00	San Antonio, TX, and Oklahoma City, OK	Mikell Spencer 405-855-3487	2 CONUS
Telephonica Contract# 4791112273	1/1/2019	11/30/2024	$1,727,595.00	Brazil and Miami, FL	Omar Jose Fajardo Aicarelli 786-845-2872	2
Telephonica Contract#	8/1/2019	9/30/2023	$191,434.50	Brazil	Omar Jose Fajardo Aicarelli 786-845-2872	1

Customer (Contract number)	Award Date	End Date	Contract Ceiling	Place of Performance	Point of Contact	Locations Supported
4791123079						
Telephonica Contract# 4791123231	9/1/2019	10/31/2023	$161,998.00	Miami, FL	Omar Jose Fajardo Aicarelli 786-845-2872	1
Telephonica Contract# 4791119951	1/1/2020	1/31/2021	$184,677.72	Miami, FL	Omar Jose Fajardo Aicarelli 786-845-2872	1
Telephonica Contract# 4791127310	1/1/2020	1/31/2021	$141,754.75	Miami, FL	Omar Jose Fajardo Aicarelli 786-845-2872	1
Telephonica Contract# 4791120648	5/15/2019	2/14/2024	$230,915.55	Brazil	Omar Jose Fajardo Aicarelli 786-845-2872	1
NIH Contract# GS-35F-0739M	2/15/2019	2/15/2023	$18,000,000.00	Bethesda, MD and Sterling, VA	Jon Burlebach 310-496-7372	2
DOJ JMD Contract# aaS Agreement / Number Not Applicable	10/1/2019	9/30/2024	$24,000,000	Pocatello, ID, Sterling, VA and Clarksburg, VA	James Power 202-307=6805	3 CONUS
Library of Congress Contract#	9/9/2019	12/8/2024	$1,687,891.00	Manassas, VA and Wise, VA	Deborah Carr 202-707-3453	2

Customer (Contract number)	Award Date	End Date	Contract Ceiling	Place of Performance	Point of Contact	Locations Supported
LCCIO19L0127						
U.S. Geological Survey Contract# 140G0220D0002	1/1/2020	1/12/2024	$100,000,000.00	Denver, CO and Rolla, MO	Kevin Wood 573-3083584	2

Figure 24: ViON's Past Performance Experience Summary

4.3.2.2 Vendor must provide at least two (2) on-premise infrastructure hardware and/or service contract summaries for in-progress or completed contracts within the past five (5) years that are similar in size and scope to this solicitation.

ViON provides our contract summaries below for relative in-progress/completed contracts within the past five (5) years that are similar in size and scope to this opportunity.

Please also see relevant experience as answered in Sections 4.3.1.1, 4.3.1.2, 4.3.1.3, 4.3.2.5, and 4.3.2.1.

REFERENCE 1(Noted also section 4.3.1.5 above):

Program Title: DISA Advanced Interactive Executive (AIX) III

Contracting Agency or Customer: Defense Information Systems Agency

Period of Performance: Five (5) Year Base (10/12/12 through 10/12/17), with three (3) 1-year Options to October 12th, 2020

Contract Ceiling: $170,898,036.00

Point of Contact: Program Manager, Justin Stubblefield; **Telephone:** (405) 739-3736

SCOPE: ViON performs provisioning IBM AIX Processor Capacity as a Service. ViON's Capacity Service offering at DISA includes acquisition, delivery, configuration, installation, maintenance, and de-installation of a wide array of IBM's advanced Power Systems hardware, software, and infrastructure components.

Using ViON's Capacity Call Order process, ViON has processed Call Orders for increases *and* decreases in the following classes of Processor Services: Mid-Tier Processor Services; Enterprise-Tier Processor Services; Enterprise Hardware Management Consoles; high-performance I/O interfaces, Power HA Software, Professional Services, as well as advanced technical support, documentation and performance analysis.

ViON won DISA's competitively awarded Capacity Services System P Contract in 2018, a recompete we were awarded as an extension to our work on AIX I & II. With a contract ceiling of **$170million**, the work ViON performs for DISA is provisioning AIX Processor Capacity as a Service (CaaS). Using ViON's Capacity Call Order process, ViON has processes Call Orders for increases and decreases in the following classes of Processor Services: ViON pioneered many significant aspects necessary for successful implementation of capacity-based acquisition of IT services. Some of these innovations include call order processing, the "RFU" process for Acceptance, and monthly invoicing of capacity-based orders.

ViON gained experience and developed skills over the course of this contract while deploying 30 IBM AIX Power servers; redundant management infrastructures, special purpose clustering and High Availability software. These systems were installed and maintained in two different DISA Datacenters (San Antonio, Texas, and Oklahoma City, Oklahoma). ViON also provides the engineering and knowledge transfer expertise DISA uses to build and support enterprise AIX processing capabilities. When requested, ViON has frequently provided DISA with on-site Systems Administration support. ViON regularly attends DISA contract reviews and technical meetings in Denver, Ogden, Oklahoma City and San Antonio. ViON has hosted DISA periodic reviews from our location in Herndon, Virginia - meetings attended by both DISA and Mission Partner executives.

ViON has effectively analyzed and met DISA requirements for more than nine (9) years under the previous and current AIX contracts by working diligently to gain an in-depth understanding of technologies, management practices, security constraints and other requirements of DISA's Mission Partners. A robust, cost-effective hardware and software infrastructure has been deployed to facilitate DISA's on-going enterprise wide data center and IT service consolidation efforts.

REFERENCE 2:

Program Title: Enterprise Storage Services I (ESS)

Contracting Agency or Customer: Defense Information Systems Agency (DISA)

Period of Performance: Five (5) Year Base (02/08/08 through 02/07/13), with three (3) 1-Year Options + 1-year Extension to August 7th, 2017

Final Contract Cost: $444,716,636

Point of Contact: Program Manager, Ryan Ashley; **Telephone:** (303) 224-1785

Scope:

ViON won DISA's competitively awarded ESS Contract in 2008 and continued work for 2 years after the originally solicited period of performance on extensions of contract through 2016. The work ViON performed for DISA was provisioning Storage Capacity as a Service. Using ViON's Capacity Call Order process, ViON processed 3,075 Call Orders for increases and decreases in the following classes of Storage Services:

Enterprise Storage Services (Hitachi & EMC)	Enterprise Storage Resource Management (Symantec)
Mid-Tier Storage (Hitachi & EMC)	Data Replication (EMC Recover Point)
Network Attached Storage (NetApp)	Local Area Networking (LAN) Switches (Cisco)
SAN (Storage Area Network) & SAN extension devices (Brocade)	Backup and Archive Software (Commvault)
Departmental Tape (STK/SUN/Oracle)	Data Domain appliances (EMC Data Domain)
Mid-tier Tape (STK/SUN/Oracle)	Mainframe channel gateways for Data Domain (Luminex)
Enterprise Tape (STK/SUN/Oracle)	Content Addressable Storage (EMC)

Figure 25: ViON's Storage Support Services on ESS

ViON pioneered capacity-based call order processing, the "RFU" process for Government Acceptance, and monthly billing/invoicing of capacity call orders. ViON gained vast experience and developed great skill over the course of this contract while deploying 60+ PB's of storage; 13,000 SAN Ports; 44 Tape Libraries with thousands of tape cartridges; and 4+ PB of Backup software and 3+ PB of Archive software at 28 locations worldwide.

ViON had well-established processes for all key contract elements: ordering, CM, installation, operations and maintenance, and quality assurance. ViON's comprehensive PMO utilizes a unique model achieving maximum flexibility for capacity changes (increases and decreases)

providing the lowest cost and fees in support of DISA. ViON developed a unique web-based Call Order processing system which remains a standard, known as the VCSP. The VCSP will be tailored for WVOT to create a defined work-flow process for WVOT's call orders. ViON's PMO demonstrates our capability to provide large-scale program management and to successfully execute on custom-tailored solutions for customers' specific needs.

Specifically, as it relates to cost-savings, ViON facilitated major performance improvements during the effort by replacing SATA drives with higher-performance SAS drives, and then later replacing the 2-TB SAS drives with 900-GB drives—all at no additional cost to DISA. Over the contract life, ***ViON provided over 20 major technology upgrades and more than ten (10) voluntary price reductions to ensure DISA's performance objectives remained satisfied.*** ViON deployed virtualization capabilities across the entire DISA Enterprise, facilitating growth by reducing DISA's technology footprint and maximizing savings on power, cooling, floor space, and network connectivity costs.

Furthermore, ViON efficiently scaled the allocation and use of storage in grand-scale database applications, including the world's largest compilation of military health records. Full accountability is maintained by ViON through detailed tracking and reporting that covers every transaction. ViON's straightforward, all-inclusive, firm-fixed-price services allowed DISA to control cost with predictability for planning and budgeting throughout the life of the contract.

ViON provided DISA with a backup and replication solution for all mission critical workloads. For example, VION provided DISA with Commvault software and assisted with its implementation to allow DISA to backup and restore the world's largest (at the time) email system. In addition, ViON also provided and implemented Hitachi Universal Replication to support the multiple petabytes of data being replicated to and from various DECCs in support of disaster recovery and data backup.

In addition, ViON continuously analyzed system management information to provide proactive engineering and advisory services that maintained peak performance across all storage platforms. VON used a suite of OEM provided tools including Hitachi's Tuning Manager Analytics and Solar Winds Network Management in order to provide DISA with detailed metrics on read/write throughput, response times, and latency, switch port errors and pending I/O. ViON maintained peak subsystem performance which allowed DISA to achieve, and in most cases exceed the required ESS performance SLAs. ViON effectively analyzed and satisfied DISA requirements for almost 9 years under the ESS contract by working diligently to gain an in-depth understanding of enterprise technologies, management practices, security constraints and enhancement requirements.

As with our other federal and state contracts, ViON has consistently delivered complete solutions on ESSI utilizing different technologies. We are confident that our past work with DISA demonstrates our ability to meet WVOT's currently stated requirements, particularly in the IaaS field which we specialize in performing. As such, we believe that this contract has wide applicability to Data Center 2.0 solicitation as it relates to on-premise infrastructure hardware and services experience.

REFERENCE 3:

Program Title: IaaS for National Geospatial Technical Operations Center (NGTOC)

Contracting Agency or Customer: United States Geological Survey (USGS), NGTOC

Period of Performance: 10/1/2017 – 1/31/2024

Contract Ceiling: $4,000,000.00

Point of Contact: Shared Services Manager, Kevin Wood **Telephone:** (573) 308 3584

Scope:

In October 2017, ViON was awarded a limited-scope IaaS contract with the USGS NGTOC for Dell servers. As evidenced through the power of our offering and commitment to NGTOC as its "trusted advisor", the program has grown exponentially, delivering an expansive catalog of infrastructure comprised of Dell, NetApp, Cisco, and Pure Storage across USGS NGTOC sites in Rolla, MO, and Denver, CO. ViON worked hand-in-hand with NGTOC to collect and analyze requirement – vetting multiple solutions from dozens of vendors, and delivering compute, network, storage, software, and service options that met the needs of mission-critical workloads Our partnership with NGTOC resulted in substantial growth to its production capabilities, allowing the agency to survey 110K more miles than the previous year, meeting, and exceeding stretch goals for 2018.

For 2019—despite appropriations challenges that halted operations for over a month, the agency met and exceeded their goals once more. During the lapse, ViON leveraged its technical and logistical expertise to make informed decisions that were immediately deployed when NGTOC became fully operational. Our unwavering commitment continued through the year, as we deployed various technologies and expertise that allowed for optimization of these solutions.

ORAL PRESENTATIONS (RFP 4.4)

The Agency has the option of requiring oral presentations of all Vendors participating in the RFP process. If this option is exercised, it would be listed in the Schedule of Events (Section 1.3) of this RFP. During oral presentations, Vendors may not alter or add to their submitted proposal, but only clarify information. A description of the materials and information to be presented is provided below: Materials and Information Requested at Oral Presentation:

If an Oral Presentation option is exercised, ViON acknowledges and accepts the requirements described in section 4.4 Oral Presentations.

APPENDIX A – IMPLEMENTATION AND TRANSITION PLAN

Government Customer Implementation and Transition Plan

For more than 38 years, ViON Corporation (ViON) has been designing, providing, installing and operating enterprise Information technology solutions for large and small government and commercial organizations. In this time, we have developed a stellar reputation for doing "the right things" for all of these customers. We represent the highest levels of technological design, manufacturing, installation and support available in the Federal marketplace today. The most robust of these are our "as a Service" offerings. The following is our sample customer Implementation and Transition Plan.

C.5.1.1 Subtask 001: Project Implementation and Transition.

The ViON Implementation and Transition Plan is made up with one "Pre-phase" and four distinct Implementation Phases; Discovery, Reconciliation, Knowledge Transfer, and Design. Each of these phases is described below. Prior to contract award, ViON, will continue pre-operations in support of commencing contract activities. These pre-operations will include ViON PMO meetings to further develop the Project Documents and Deliverables.

a) Discovery, Reconciliation and then, Knowledge Transfer.

Upon award, we will immediately send our Program and Operation Managers to meet with the key customer leadership team to set an agenda and schedule for the Kick-Off meeting. ViON will begin working on and off-site with cusomter staff to collect and collate additional specific data about the technology installed in the customer's current environment. This will include configuration guides, diagrams, and inventory lists for all installed technology. At this time ViON will require access to cusomter's complete CMDB and Asset database. We will take an active role in the data gathering and verification of existing documentation using a range of proven tools and processes.

These tools will include, but will not be limited to, industry standard OS performance assessment tools such as "top" "sar", "iostat", and PerfMon, as well as vendor provided ECA, EMC Reports and EMC Grab utilities, and E-lab Advisor. For more than ten years, ViON has employed the storage technology utilities and hardware subsystems provided by Virtual Instruments (formerly a division of Finisar) to identify and remediate Fibre Channel performance and availability challenges. We will continue to use these capabilities on behalf of the customer. ViON will use all of these capabilities to determine a system baseline and then fully document the entire environment, including hardware components, software versions, capacity and connectivity. Reports will be coalesced into a comprehensive Uniform Discovery and Reconciliation (UDR) report which will be delivered to the customer within 30 days of Transition start. ViON will meet with the customer to verify the comprehensiveness and accuracy of the report, as well as capacity estimates.

In addition to assessing the project Go-Live implementation, we will work with the customer to design an overall framework for all the data to be transferred to the project architecture over the life of the contract. This approach will take into consideration: the age of equipment, current and

projected extended warranty costs, system performance, and calculating real and projected numbers of storage arrays required to meet the customer's workload and performance requirements now and into the future. The intent of this approach will be to achieve the lowest cost of storage, optimum storage utilization, minimum power consumpton (power and cooling), and to minimize floor space requirements.

This UDR report will serve as the basic framework of the project Go-Live implementation and the design of the overall approach for all data to be migrated to project. Using the UDR, ViON will perform knowledge transfer, both verbal and in writing, working onsite with the customer staff during the entire Transition-in period.

b) Storage Infrastructure Design.

In developing its design ViON took into account the Service Class characteristics and customer's technical requirements listed below. ViON's design for the project storage infrastructure provides a tiered storage environment for block storage that is physically partitioned into multiple distinct storage classes based on performance and availability. Additionally, ViON's design calls for a separate NAS system for file storage and other storage infrastructure components for switching, replication, file splitting, monitoring, and management. The technical performance specifications providing the four key metrics specified by the customer for block storage are provided below in Figure 5 – "Service Class Specifications." Changes or additions to these classes will be made upon request by the customer. ViON's solution for file storage using a NAS appliance cannot be measured in the same manner as block storage, so the performance metrics are likely to be different for this element of the project architecture. Each storage class will be available to each data center, based on the technical requirements of each. ViON's solution is designed to allow quick and flexible growth accommodation in each class.

Service Class Specification	Service Class: Platinum	Service Class: Gold	Service Class: Silver	Service Class: Bronze/Archive
Unplanned downtime per year	None	None	None	None
IOPS	Up to 45,000	Up to 30,000	Up to 20,000	Up to 10,000
Response time (ms)	< 5 ms	5-8 ms	9-12 ms	13-30 ms
Throughput	Up to 2.5GBps	Up to 1GBps	Up to 600MBps	Up to 600MBps

Figure 1: ViON's Flexible Solution by Class

It is ViON's understanding that the performance portion of the SLAs, specifically the IOPS measurement, is defined as an aggregate of the overall performance of the VMAX storage system for a specific class of service. It is ViON's contention that IOPS measurements have the potential to vary significantly based upon attributes outside of the control and boundary of the project environment, such as workload from the servers, type of random/sequential attributes of application requirements, and how and where measurements are taken. While the Virtual Instruments system can measure performance on a single fiber channel port going into the front end of the storage system, IOPS measured upon a single port will not be reflective of the overall aggregate performance of the systems for a required performance level for a class of service to meet an SLA. ViON would like to work with the customer to determine the best means of

measuring this performance metric to ensure increased operational support to the customer applications while providing an obtainable outcome to meet SLAs. The IOPS measurements must be a combined calculation over the total front-end ports, servers, and the aggregate of the total drives in the system for a class of service.

The following diagram is a high-level architecture of the ViON solution for the project at the three customer data centers.

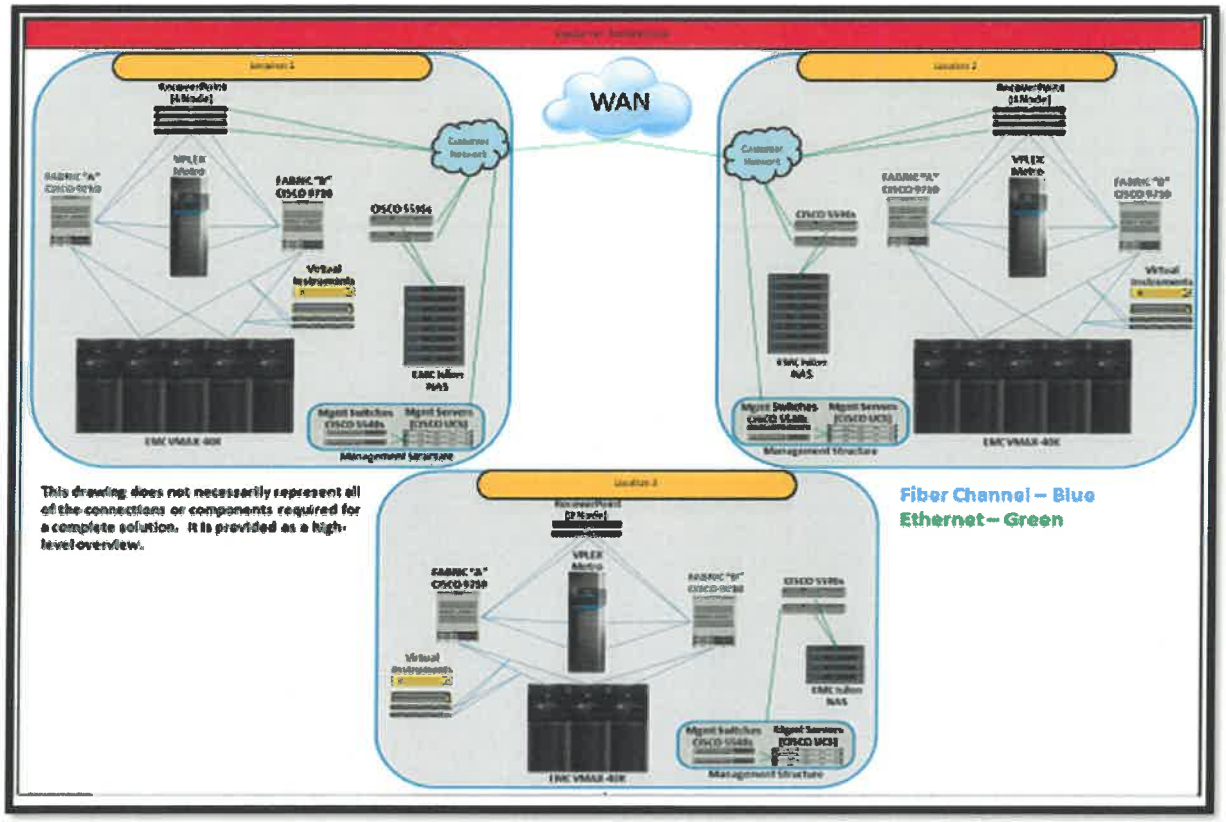


Figure 2: Go Live Architecture

c) Technical Infrastructure Design

1. In developing its proposed solution, the ViON Team took into account the identified Service Class characteristics and the customer's technical requirements listed below. The specific device specifications and configuration requirements of the infrastructure are compatible with the customer's environment, and consistently meet the customer's SLAs.
2. ViON will provide an initial storage infrastructure (e.g., at Go-Live) that includes a minimum Provisioned Usable Capacity by Service Class for block storage as well as usable provisioned storage for NAS. Provisioned Usable Capacity for the project Implementation (in Terabytes) is shown on the following page.

Service Class	Production	Location 1	Lab
Platinum	0	0	0
Gold	40	40	40
Silver	520	520	230

Service Class	Production	Location 1	Lab
Bronze	0	0	0
NAS	250	250	125
Total	810	810	405

Figure 3: Service Class Infrastructure

3. ViON will provide fibre channel SAN switches and IVRs between the project fabric and the existing customer SAN fabric in all three environments. ViON will also provide Ethernet network switches to support NAS storage requirements and management infrastructure, with connections made to the customer network LAN switches.
4. ViON's storage infrastructure design supports the following phased suggested application data migration approach:

Phase I: All attributes and requirements of the application stack to be migrated are identified, scoped and agreement from customer staff is secured.

Phase II: For each application server being migrated, application *data* will be migrated from the customer infrastructure to the planned project infrastructure by connecting the customer existing SAN fabric to ViON's project SAN fabric and replicating data using OEM utilities.

Phase III: Once the target data has been migrated to the new infrastructure and successfully verified, host bus adapters (HBAs) connected to the customer's edge switches will be disconnected and migrated to the ViON Team's switches/SAN fabric. Upon successful verification, ViON will be responsible for the server's SAN connectivity, from end-to-end up to the HBA in the customer servers. The ViON Team will employ its proven migration methodology to ensure that each of the migrations causes minimal to no impact on customer applications.

Interphase: ViON's Portal provisioning system allows our customers to secure the use of just the amount of storage that they require, when they need it, and for only as long as they need it. Such storage is provided on a daily basis. In this way the customer maintains extremely granular control of their exact IT needs. ViON utilizes our Call Order Portal, which will be customized to meet customer needs, to initiate transactions.

By selecting capacity from our portal (see screen shot below) in this manner a draft order for capacity is designed, validated, distributed for approval, authorized, and then converted to a formal order, with no paperwork required. The status of the Call Order can be verified at any time. Capacity provided for service can even be reduced should mission activities change in the course of time. Such reductions will take place within days of the receipt of a request, as long as the storage is no longer attached to, and accessible to a server. In order to maintain data under the strict SLAs associated with the customer's requirements, ViON will not deactivate any LUNs that are in any form of use.

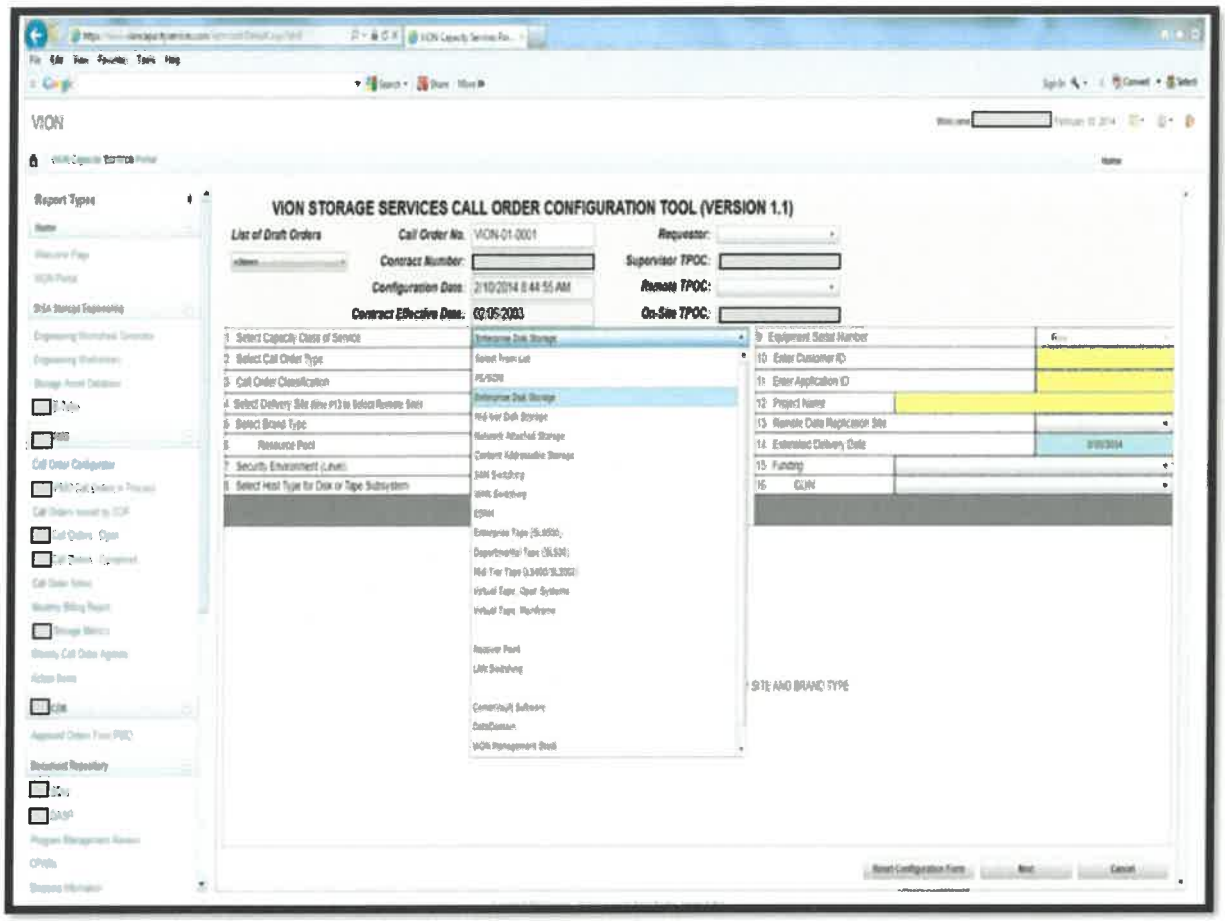


Figure 4: Capacity Services Provisioning

Using ViON's Capacity Services provisioning capability, in combination with our migration, replication and support services will result in dramatically reduced time-to-implement for the PTO's data needs, while in all probability reducing unnecessary expenditures for IT capacity in advance if, or after actual needs.

ViON will utilize its Data Migration Methodology to non-disruptively migrate the customer's data to the new project storage environment while maintaining the integrity of the storage systems and data replication. Our highly trained and experienced application migration experts' partner with the customer's staff to ensure timely and low risk data migrations of the customer's data environments.

We will assign an ITIL trained, certified, Project Manager who works with customer staff members to define the project steps, assign the correct resources, set convenient migration dates, manage the data migration , update the Configuration Management Database (CMDB), and finally test and verify that the data migration was completed successfully. Throughout each migration, the Project Manager communicates the progress of the project reports and addresses any issues or problems that occur. Formal project status reports will be provided on a weekly basis.

Our Proven Data Migration Methodology is defined in three phases; these are Discovery, Planning and Migration:

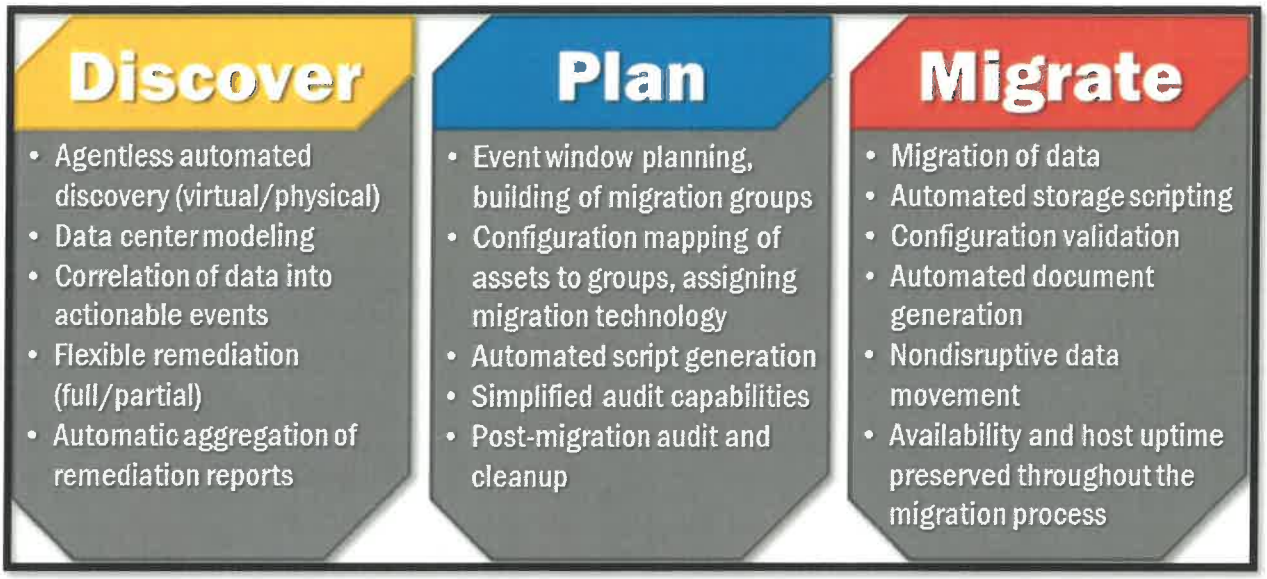


Figure 5: Data Migration Methodology

Discovery: In the Discovery Phase, VION uses various discovery tools to automate the process of server, switch and storage data collection and then correlates this information with Best Practices.

These tools have been used at thousands of commercial and Federal data centers over many years and greatly limit the impact on the customer staff and take the human error factor out of the discovery process. The correlation component allows ViON to avoid, or mitigate issues before they occur, minimizing disruption.

Planning: In the Planning Phase, ViON develops a customized plan for each individual migration, which, in turn, is rolled up into a Master Data Migration Plan. The individual project plans address all scheduling, risk mitigation and resource issues, and include an Implementation Test and Acceptance Plan.

ViON and the customer will review and approve the proposed plan. During this phase, ViON works with the customer staff to select the least intrusive tools to be used to monitor and perform the specific migrations. ViON has a vast array of tools which address data types and server configurations.

The data migration team will work closely with customer staff and the customer's established Change Management process to schedule all required change activities within the customer's prescheduled maintenance windows.

The candidate selection process for migration packages will consider logical groupings of application servers, array capabilities and details of the replication pairs. In the planning phase ViON provides a cutover schedule for the customer's final approval.

	Task Name	Duration	Start	Finish
1	Draft Customer Migration Plan	166 days	Mon 3/3/14	Mon 10/20/14
2	DRAFT Customer Migration Plan	7 days	Mon 3/3/14	Tue 3/11/14
3	Production	5 days	Mon 3/3/14	Fri 3/7/14
4	Discovery Phase	1 day	Mon 3/3/14	Mon 3/3/14
5	Install Discovery Tools	7 days	Mon 3/3/14	Tue 3/11/14
6	Verify Approval from Customer	1 day	Mon 3/3/14	Mon 3/3/14
7	Install Server, Grab, EMC Reports, ECA, etc.	4 days	Mon 3/3/14	Thu 3/6/14
8	Verify/Establish IP and fiber links	2 days	Mon 3/3/14	Tue 3/4/14
9	Execute Discovery	4 days	Mon 3/3/14	Thu 3/6/14
10	Planning Phase	3 days	Mon 3/24/14	Wed 3/26/14
11	Review Data from Discovery	5 days	Tue 3/25/14	Mon 3/31/14
12	Design for storage migration finalized	5 days	Tue 3/25/14	Mon 3/31/14
13	Timeline (based on tenant) for migration	2 days	Tue 3/25/14	Wed 3/26/14
14	Design for storage migration finalized	5 days	Tue 3/25/14	Mon 3/31/14
15	Select Migration tools/methods	6 days	Tue 3/25/14	Tue 4/1/14
16	Create and Finalize Migration Pan w/customer	3 days	Mon 3/24/14	Wed 3/26/14
17	Migration Phase	1 day	Mon 3/3/14	Mon 3/3/14
18	Install Selected Toolset	1 day	Mon 3/3/14	Mon 3/3/14
19	Cutover	1 day	Mon 3/3/14	Mon 3/3/14
20	Validate Server access to data stores	3 days	Wed 3/12/14	Fri 3/14/14
21	Power and Cabling	3 days	Wed 3/12/14	Fri 3/14/14
22	Remove Legacy Array connections	1 day	Wed 3/12/14	Wed 3/12/14
23	Project Closeout	1 day	Wed 3/12/14	Wed 3/12/14
24	Perform Project Quality Review with Customer	1 day	Fri 3/14/14	Fri 3/14/14

Figure 6: Data Migration Screenshot

In order to ensure the successful execution of the various migration projects, ViON will request that project Pre-start Responsibilities listed below be addressed by the customer prior to each migration.

Data Migration Pre-start Responsibilities - The following list specifies the customer responsibilities – must be provided prior to the initiation of each data migration to ensure successful execution of the project.

Each Migration project will be preceded by customer project staff giving guidance to ViON regarding the customer's Change, Incident, Problem and Configuration processes associated with subject equipment:

- Provide ViON with reasonable access to the customer's functional, technical, and business staff and systems as necessary for ViON to perform the Migration Services.
- Supply a list of all customer-provided hardware to be used during the migrations to allow ViON to verify the equipment conformity to all applicable compatibility matrices.
- Ensure that all required site preparations have been met for any non- ViON system components. This might include adequate power, cooling, floor space, access, security, etc.

- Make appropriate time available during system maintenance windows for ViON to prepare equipment for migration.
- Identify and maintain all network connectivity, performance, and configuration issues.
- Identify the target server Operating System; patch set level and/or component firmware levels required for this migration.
- Install any recommended patch set(s) prior to migration commencement.
- Ensure and confirm that an adequate backup and restore process exists and is operational.
- Obtain and provide any third-party licenses and maintenance agreements as necessary
- Identify and maintain all network connectivity, performance, and configuration issues.
- Provide any access required to the communications infrastructure or related components.

Note: ViON *cannot* be responsible for delays caused by customer or other conditions not under ViON's control.

Migration and Test (Transition-In): The final steps of the Methodology are the actual data migration and test/verification. Our methodology provides end-to-end integration and automation of the migration execution process. ViON's partnership with the customer ensures that 100% of the data has been successfully cutover to the new storage devices.

This guarantee of success derives in no small part from our use of the proven Highly Available technology of EMC2's RecoverPoint, VPLEX Local, Open Replicator and SRDF.

In addition, when necessary host-based migration will be utilized. Should an alternative method for migration be required there are several additional steps taken by ViON to verify completion of the migration and cutover to the new systems. Once the migration has been successfully completed, a post-migration review will be conducted, and processes will be updated as appropriate.

During the actual Migration Phase various tools will be used to perform and monitor the work. These utilities have been used by ViON successfully for many years, and many customers; some of these have been used for decades. These tools include advanced migration capabilities and utilities such as Open Replicator and Open Migrator or other proven migration utilities.

By leveraging these tools, ViON will minimize risk to the customer and minimize application disruptions, preserving host uptime and data availability. These proven technologies feature enhanced auditing functionality as well as post-migration clean-up capabilities.

Discovery Tools	Use Cases	Key Benefits	Considerations
ECA - Environment Collection App	- Enterprise discovery - Direct input to ELAB for remediation recommendations	Automated discovery	- Requires network access to all surveyed servers
EMC Reports	- Open Systems	Hands off data collection	-Difficult to take data off of site depending on classification

Discovery Tools	Use Cases	Key Benefits	Considerations
GRAB	- Open Systems	Hands off data collection	-May be difficult to get installed
Open Replicator	- Heterogeneous storage migrations - Can be used with all customer Open Systems - Supports Thick to Thin migrations	- Allows pre-scripted data migrations - Array level migrations supported - Easy to manage migration data flows	- Disruptive (but only on tool installation and deinstallation) - No mainframe or IBM i support
Host/Application Based Migration Tools	- Ideal for applications with specific logging or processing needs - Niche tools	- Many are non-disruptive - Customized for specific platforms and applications	- Usually limited functionality - Can impact host performance - May require special training
Open Migrator	- Small Windows environments - Unix environments - Device geometry changes	- Host based migrations supported - Very flexible	- Requires host admin to install and run software
Cloud Tiering Appliance	File migration transactions from a NetApp or EMC source to an EMC file server destination such as Isilon, VNX or Celerra	- Significantly reduces the period during which the client cannot write to the source - Supports both offline migrations and online tiering/data mobility	- No offline Linux/Unix migration
Federated Live Migration (FLM)	- Excellent tool for Symmetrix array migrations	Non-disruptive data movement / migration w/downtime flexibility ('unspoofing' later or never) - Thick to Thin migration	- Symmetrix to Symmetrix only - Customer tolerance for 'spoofed' hostnames - Asset retention / reuse /repurposing requires unspoofing - OS Only - Boot Devices not supported

Figure 7: ViON's Discovery Tools

Migration/Replication Technical Details:

Data Migration:

Although a single data migration may have a simple effective solution, the number of potential solution methodologies and the myriad factors influencing the selection of a solution make choosing the best data migration solution very complex. Customer environments are so diverse that migration projects are rarely the same. The process to migrate data is complex because it requires detailed planning, multiple steps, and often many different tools, resources, and approaches. A migration method that works well for one host application within a customer environment may be inapplicable for another host application, even within the same storage array; therefore, larger migrations often include multiple solutions.

Every data migration challenge has alternate solutions, so there is always a choice to be made. In practice, data migration efforts do not exist in a vacuum and there are often additional issues that affect the decision beyond the actual data movement itself. Sometimes these multiple issues align closely, but at other times they compete and the relative importance of one issue over another may strongly bias the selection of the best solution. In selecting the final solution, secondary features sometimes become more central than primary features.

Is it ViON's intention to work with the customer and select the best data migration methodology available to suite the host, storage and application that will impact the environment the least amount and provide the greatest amount of uptime. Below are some of the tools available from EMC to facilitate data migration that ViON will have available for use and as well there are the more traditional host-based copy methods available per the operating system in use.

EMC VPLEX local is a storage network-based federation solution that provides non-disruptive, heterogeneous data movement and volume management functionality. VPLEX is an appliance-based solution that connects to SAN Fibre Channel switches. The VPLEX architecture is designed as a highly available solution and as with all data management products, high availability (HA) is a major component in most deployment strategies.

EMC Open Replicator for Symmetrix enables remote point-in-time copies to be used for data mobility, remote vaulting, and migration between EMC Symmetrix VMAX or DMX and qualified storage arrays with full or incremental copy capabilities. Open Replicator can:

- Pull from source volumes on qualified remote arrays to a Symmetrix VMAX or DMX volume.
- Push any live source Symmetrix VMAX or DMX volume to a target volume on a qualified array with incremental updates.
- Perform online data migrations from qualified storage to Symmetrix VMAX or DMX with minimal disruption to host applications.

PowerPath Migration Enabler (PPME) is a host-based migration product that migrates data between storage systems. PPME takes advantage of PowerPath technology and works in conjunction with another underlying technology, such as Open Replicator, TimeFinder/Clone, or Host Copy to actually migrate the data. PPME provides a host-based solution with virtually no impact to host resources by utilizing array-based or SAN-based replication (except when using Host Copy). PPME benefits data migrations in three significant ways:

- Greatly reduces or eliminates application disruption due to the migration
- Reduces migration risks

- Simplifies migration operations

PowerPath Migration Enabler is independent of PowerPath Multipathing technology and does not require the use of PowerPath for multipathing. SRDF/DM product offering permits operation in SRDF adaptive copy mode only and is designed for data replication or migration between two or more Symmetrix systems. SRDF/DM transfers data from primary volumes to secondary volumes permitting information to be shared, content to be distributed, and access to be local to additional processing environments. Adaptive copy mode enables applications using that volume to avoid propagation delays while data is transferred to the remote site. SRDF/DM supports all Symmetrix systems and all Enginuity levels that support SRDF and can be used for local or remote transfers.

Replication:

All production data under ViON's management will be replicated to the site utilizing the EMC VPLEX and RecoverPoint products. For active-to-active configured applications, replication will be managed by the application and be replicated to ViON-provided storage in Boyers.

EMC VPLEX delivers availability and data mobility across sites. VPLEX is a continuous availability and data mobility platform that enables mission-critical applications to remain up and running during a variety of planned and unplanned downtime scenarios.

By allowing painless, non-disruptive data migrations, VPLEX enables technologies like VMware, Oracle Real Application Clusters (RAC), and other clusters that were built assuming a single storage instance to function across synchronous distance. Customers can achieve continuous availability and transparent mobility, both locally and over distance, through VPLEX's simultaneous access to storage systems at geographically separate sites.

Designed for 100 percent continuous operations, VPLEX allows you to:

- Take advantage of advanced data caching and distributed cache coherency that creates a high-availability infrastructure across arrays in a single site or across geographically disperse data centers (dependent on distance and bandwidth availability), with unmatched resiliency and active-active data access, eliminating planned and unplanned downtime for application data.
- Gain dynamic data mobility, the ability to move applications.
- Meet strict SLAs.
- Use EMC RecoverPoint with native-splitter technology for VPLEX, combining the benefits of high availability and disaster recovery in the same deployment.

VPLEX key use cases:

- Continuous operations – Enables multi-site data replication with VPLEX Geo.
- Migration/tech refresh – Gain accelerated and nondisruptive migrations and technology refresh with VPLEX Local

EMC RecoverPoint provides continuous data protection for storage arrays running on a dedicated appliance (RPA) allowing for the protection of data at both local and remote levels. RecoverPoint provides bi-directional replication enabling the recovery of data to any point in

time while replicating data over any distance; within the same site (CDP), to another distant site (CRR), or both concurrently (CLR).

RecoverPoint clusters are used to provide Continuous Data Protection (CDP) and Continuous Remote Replication (CRR), or in the alternative, these functions are combined in a Continuous Local and Remote (CLR) instance. RecoverPoint CDP tracks data changes at a block level and journals these changes locally. These journals then allow rolling data back to a previous "Point-In-Time" in order to view the drive contents as they were before any particular point.

This capability can be used to recover from hardware failures, or from complex data corruption scenarios.

CDP can journal each write individually, enabling "Any-Point-In-Time" snapshots, or it can be configured to combine consecutive writes in order to reduce journal space and improve bandwidth. Where possible (and permitted by application owners), RecoverPoint applies compression and de-duplication in order to reduce WAN traffic, reducing the data transfer window required to replicate/migrate a workload.

EMC2 has worked directly with virtually every major software vendor to insure tight, fail-safe integration with enterprise applications via published APIs. RecoverPoint creates "intelligent bookmarks" designed to provide this integration. Vendor APIs that are integrated include Microsoft, Oracle, and VMWare.

1. The ViON solution will support both fiber channel and IP network infrastructures and will provide a gateway or integrated portal to provide common internet file system (CIFS) and network file system (NFS) connectivity to the customer's IP network.
2. ViON will, as part of managing a multi-fabric SAN environment, support server multi-pathing, based on the application servers' operating system layers. All Operating Systems currently attached to the customer SAN (as listed in the RFQ) will be supported.
3. ViON will provide a "tap and probe" hardware interface for each Fibre Channel port of their block storage arrays. These will allow the customer to monitor performance of the storage infrastructure. These capabilities will be installed using the advanced technologies provided by Virtual Instruments. Virtual Instruments' FC test and monitoring technology represents the best available in the marketplace today.
4. Relying on Virtual Instruments technology, as well as service processors built into each storage component, ViON will ensure that its infrastructure comes with sensors and monitors that will fully integrate with the ViON Support Center while also automatically contacting the customer's Command Center (e.g., via SMTP traps) should a hardware or software failure be detected.
5. ViON will ensure that all Fibre Channel SAN interface connections meet industry standard Optical Multimode 3 (OM3) requirements. The current Virtual Instruments systems support a maximum of 10Gigabit/sec speeds, limiting ViON's solutions to 8Gigabit/sec fiber channel speeds.

"Green" Hardware

ViON recognizes the importance of "Green IT" initiatives and is selecting hardware components that minimize power consumption without sacrificing performance or availability. In designing

our solution, ViON has, wherever possible, endeavored to reduce the energy consumption of the storage systems and all supporting infrastructure.

Manufacturing Efficiencies

For example, one of our manufacturing partners, EMC2 operates with a corporate commitment towards energy efficiency known as "Design for Environment (DfE) process" which works continuously to generate savings for their customers and to help them reduce their environmental impact by improving the energy efficiency of their products. These improvements, which apply to both hardware and software products, include delivering industry-leading functionality to manage demand, driving increased efficiency, and tightly integrating many products within the data center.

This process starts with product designers and architects who gain insights into sustainable product design by using proxy indication systems that are embedded into their design tools. As the process continues, EMC2 engineers consult development checklists to ensure products adhere to these corporate standards and best practices. During the final stage, when products become ready for general release, lifecycle analyses are conducted on representative product configurations with a goal of informing future developments. Moving forward, EMC2 will continue to focus on the following areas:

- Increasing the energy efficiency of our products
- Working with suppliers to reduce impacts of manufacturing disk drives
- Investigating reductions in carbon-emitting transport for products and components
- Exploring novel light weight techniques
- Developing environmentally friendly printed circuit board materials
- Improving packaging efficiency without compromising efficacy
- Maximizing recovery and recycling of products at end of use.

Energy Consumption (ENERGY STAR) Commitments

ViON is committed to partnering with manufactures that are actively engaged and committed to reducing energy consumption levels.

Efficient Storage Drives

ViON offers a variety of disk drives to meet varying needs of capacity, performance, and cost while paying particular attention to power consumption, matching drives to their purpose. For example, high-capacity SATA drives use less power but have slower performance. In contrast, lower capacity FC/SAS drives use more energy but meet higher performance SLAs.

Efficient Power & Cooling

Beyond drives, there are three other key initiatives for reducing power use in storage platforms:

Power Supplies: Using more efficient power supplies to reduce energy loss as power is delivered to the storage platform. The use of high-efficiency power supplies reduces total equipment power and minimizes the generation of waste heat. This can yield significant savings in the facility cooling and power distribution infrastructure. Power supplies in the current ViON

project architecture solution have achieved a "Gold" rating against the Industry standard 80 PLUS benchmark.

Power Monitoring: Embedding instrumentation and utilizing effective tools to monitor and report power use and ambient temperature.

Adaptive Cooling: Embracing adaptive cooling technology is used to save energy by dynamically adjusting fan speeds in the storage platform. Our adaptive cooling technology continuously samples the external environment and adjusts its operation to minimize power consumption while maintaining reliability.

ViON is proposed an initial five rack block storage system per environment, with the plan for growth into additional racks based upon capacity increases. The power and cooling data associated with these five racks are outlined below. The additional EMC, CISCO, Virtual Instruments, and management support systems will require a minimum of four additional racks, which are not detailed below.

Voltage:	V ~ 208 and V ~ 120/208				
Rack Name	**Power Consumption (kVA)**	**Heat Dissipation (Btu/hr)**	**Phase A**	**Phase B**	**Phase C**
Rack 1	**5.94**	**19,100**	**11.1A**	**17.0A**	**17.0A**
Rack 2	**4.53**	**13,700**	**8.2A**	**12.5A**	**12.5A**
Rack 3	**4.46**	**14,700**	**11.8A**	**11.8A**	**8.7A**
Rack 4	**4.53**	**13,700**	**8.2A**	**12.5A**	**12.5A**
Rack 5	**5.94**	**19,100**	**11.1A**	**17.0A**	**17.0A**
System Total	**25.40**	**80,300**			

Figure 8: ViON's proposed initial 5 rack block storage system

- The ViON Team will be responsible for any cabling related to their managed infrastructure.
- The ViON Team will guarantee all ViON owned equipment is IPV6 compliant.

d) Storage Infrastructure Design, Development, and Implementation.

Using appropriate ITIL processes, ViON will document the initial project implementation infrastructure. Upon review and approval by the customer, ViON will develop, test, and implement the resulting compliant infrastructure.

Additionally, ViON will develop and deliver as appropriate, a System Assessment Package (SAP) to design and document the initial project infrastructure. In order to facilitate the development of the SAP, ViON understands that the customer will provide the following templates (for a Moderate system) to ViON: System Security Plan (SSP), Risk Assessment Report (RAR), Security Assessment Report (SAR), Plan of Action and Milestones (POA&M), and Security Requirements Traceability Matrix (SRTM) workbook. ViON's understands that project has been classified as a Moderate Risk Contract.

Transition Risk Management

ViON's risk management approach to the project is based on a systematic process of identifying, analyzing, and responding to program risk.

The Program Management team (PM) develops an initial risk management approach, performs, and documents a risk assessment starting during the planning phase of a transition activity or migration project, and monitors and controls the risk factors throughout the project. Risk includes not only threats to the objectives of a project, but also identifies intermediate activities that may improve the project outcome. Figure 8 below addresses the initial risk assessment for the customer transition project.

Once risks to the project or activity are identified, the PM will lead team discussions to identify risk containment and mitigation strategies for each risk item from the assessment (above). ViON utilizes a rigorous internal risk mitigation process that validates proposed changes to a customer's storage infrastructure assets before implementing changes to minimize risk. This process ensures proper planning has been completed, knowledge has been applied and correct procedures are followed to maximize the success rate.

Risk Description	Risk Rating	Mitigation Strategies	Residual Risk
During transition valuable institutional control could be lost	Medium	Prior to contract award ViON will appoint an experienced, fulltime Program Manager who will act as the exclusive transitional lead for ViON. This person will be fully briefed on the customer's processes and vendor storage technologies and will have the authority to act as the single point of contact for the entire ViON Transition Team. ViON will use its understanding of ITIL processes and procedures allow our team to readily absorb existing customer processes and documentation.	Low
Availability of qualified personnel to adequately staff the transition and data migration efforts.	High	The ViON team has more than 250 cleared and certified professional services resources dedicated to our Federal projects. This level of staffing capability allows us to meet any "surge" requirements caused by concurrent implementation and migration projects. ViON will bring any number of trained and certified storage professionals to support all surge requirements, as required by circumstances.	Low
Ability to meet the customer's transition and migration schedules	High	ViON understands the urgency to migrate all of the customer's data from the existing platform to the new project platform before costly maintenance renewals are triggered. Our ability to launch concurrent migrations using state-of-the-art tools will allow the customer to meet its requirements while accelerating migration off of	Low

Risk Description	Risk Rating	Mitigation Strategies	Residual Risk
		the old equipment.	
Possible migration impact on the customer's systems and end users	High	ViON's use of a proven migration methodology and advanced discovery tools allows us to identify and remediate customers' server and array issues prior to initiating each migration.	Low
Ability to manage data migrations uniformly	High	ViON will utilize its innovative and proven storage migration program to ensure uniform, consistent, and repeatable migrations across all of the customer's storage environments. ViON will collaborate with customer regarding all migration activities.	Low

Figure 9: ViON's Mitigation Strategies

ViON's project Implementation and Transition Plan is intended to document all required actions. ViON will be responsible for, at a minimum, transitioning/assuming ownership of the application data, and any data migration required; project storage infrastructure operation; receipt of all pertinent documentation and relevant specifications; continuity of operations during transition-in; and ongoing operations support.

This includes the development of an Implementation Test and Acceptance Plan prior to data migration. ViON understands that we must conduct a functional walk-through/demonstration for the customer of the project Go-Live environment for approval.

We will test each new solution in the customer on site lab environment prior to release to production. It is our understanding that ViON will receive Authority to Operate (ATO), based on its delivered SAP, prior to data migration.

ViON will, as part of each migration, assist in defining data to be migrated to the new devices, perform a test data migration to the new devices, migrate data, validate successful migration, and turn on new platforms to live production. Following a post-migration review, updates to migration procedures from "lessons learned" will be added to the customer and ViON documentation.

Additionally, ViON will develop and maintain an Implementation Complete Report detailing that it has successfully completed Transition to the initial project infrastructure.

The ViON Team will provide Deliverables in the form of draft and final project Implementation and Transition Plan, Project Infrastructure Design Document, Systems Assessment Package (SAP), and an Implementation Test and Acceptance Plan in accordance with the initial project schedule.

Project Operations and Service Management Project Operations and Service Management

After the customer's acceptance of ViON's transition and project Go-Live deliverables, the contract will enter the on-going operations phase, wherein ViON will be responsible for the day-to- day operations of the infrastructure across a range of tasks.

The table below identifies Operations and Service Management, describing the roles and responsibilities of customer and ViON staff for storage infrastructure on-going operations — for all storage that is owned and managed by ViON.

Section # and Task	Customer	ViON
(a) Program Management Planning and Execution		
Maintain a Program Management structure and approach across all contract tasks		√
Develop and maintain a Risk Management Plan and Traceability Matrix		√
Provide applicable customer procedures and policies	√	
(b) Personnel Management		
Maintain staff that is qualified, certified, and regularly trained		√
Employ staff best adapted to the evolving storage needs of the customer		√
Provide an Information Systems Security Officer (ISSO) that is a Certified Information Systems Security Professional (CISSP).		√
Approve proposed Key Personnel	√	
(c) Quality and Performance Management		
Ensure quality of operations and deliverables		√
Assess quality of operations and deliverables against defined SLAs	√	
Update its quality assurance program if warranted based on deficiencies identified by the customer		√
(d) Project Management and Reporting		
Develop specific project plans with critical path and milestones		√
Approve plans confirming they are integrated with the work and tasks performed by the customer or other contractors	√	
Participate in routine Program Management Review (PMR)	√	√
(e) Storage Infrastructure Planning		
Provide intermediate and near-term storage estimates and expected application implementation timeframes	√	

Section # and Task	Customer	ViON
Perform demand management	√	√
Perform capacity management		√
Provide power (type and amount) and space estimates		√
Provision adequate facilities (power, AC, space)	√	
(f) Storage Infrastructure Design and Engineering		
Develop/update storage infrastructure design and configuration documentation based on adds and changes		√
Review and approve storage infrastructure design	√	
Change configurations to realize optimizations	Approve	√
Research and recommend new technologies	Research, Approve	√
Develop and deliver Innovation Plan	Review	√
(g) Storage Infrastructure Adds and Changes		
Provide capacity requests for additional storage	√	
Perform request fulfillment, provide capacity		√
Perform storage administration		√
Perform cabling (e.g., from application servers to the SAN fabric)	√	
Perform cabling to Contractor managed storage		√
Interface with application team for application migrations	√	√
Execute migration	Lead	Tasks as needed
Provide input on migration approaches	√	√
Perform release and change management	√	√
(h) Security		

Section # and Task	Customer	ViON
Develop initial Security Package		√
Conduct independent security assessment		√
Review security package, conduct IV&V	√	
Give Authority to Operate	√	
Update security package for material changes		√
Respond to security incidents		√
(i) Asset Management		
Purchase and receive hardware		√
Track asset inventory	√	√
Properly dispose of assets (e.g. data removal)	Inspect	√
(j) Service Operations and Maintenance		
Provide 24x7x365 day support		√
Perform service level management		√
Perform availability management		√
Perform regular preventative system maintenance		√
Perform administrative systems back-ups		√
(k) Infrastructure Monitoring and Incident Response		
Perform infrastructure monitoring	√	√
Send automated alarms for incidents	√	√
Receive or report incident in the customer's Remedy system	√	√

Section # and Task	Customer	ViON
Troubleshoot and develop incident response plan for certain incidents		√
Review and sign-off on plans affecting customer operations	√	
Perform root cause analysis		√
(l) Problem Management and Performance Tuning		
Tune performance to meet and exceed performance objectives		√
Troubleshoot pervasive, advanced performance issues		√
(m) Continuity of Operations and Disaster Recovery Support		
Implement real-time replication of production data to Boyers		√
Participate in disaster recovery planning	√	√
Participate in a disaster recovery event	√	√

Figure 10: ViON's Service and Operations Management

ViON's roles and responsibilities, as outlined above, have been mapped into the table of organization on the following page in order to document the roles and responsibilities of ViON project proposed personnel.

Group	Roles	Responsibilities
Program Management Office	Program Manager	• Maintain Program Management structure and approach across all contract tasks • Maintain qualified, certified, and regularly trained staff • Participate in routine Management Reviews (PMR) • Perform project request fulfillment, provide capacity • Direct purchase of, and receive hardware
	Deputy Program Manager	• Develop and maintain a Risk Management Plan and traceability Matrix • Ensure Quality of Operations and deliverables. • Update Quality Assurance Surveillance Program if warranted based on deficiencies identified by the customer
Operations Management	Operations Manager	• Employ staff to best the evolving storage needs of the customer

Group	Roles	Responsibilities
		• Perform in demand management capacity • Perform storage capacity Management • Perform Service Level Management
	Project Manager/ Coordinator (Migrations)	• Develop specific project plans with critical path and milestone charts • Interface with application team for application migrations
	Information Systems Security Officer	• Develop initial Security Package • Conduct independent security assessment • Update security package for material changes • Respond to security incidents
Engineering Management	Senior Storage Engineer	• Perform Storage Administration • Perform cabling connecting Contractor managed storage • Track asset inventory • Properly dispose of assets • Perform availability management • Perform administrative system back-ups • Perform Infrastructure Monitoring • Receive & report incident in the customer "Remedy" System. • Trouble-shoot and develop incident response plans • Perform root cause analysis • Tune performance to meet and exceed developing performance requirements • Troubleshoot pervasive, advanced performance.
	Storage Hardware Specialist/Expert	• Provide power (type and amount) and space estimates • Develop/update storage infrastructure design and configuration documents based on adds and changes • Change configurations to realize optimization • Develop and deliver innovation plan(s) • Perform release and change management
	Storage Hardware specialist/Senior Storage Engineer #X	• Will share responsibilities with both the Storage Hardware Specialist and the Senior Storage Engineer. • Will also provide continuity in both positions (coverage).
	Network Engineer	• Primarily responsible for the maintenance and configurations of CISCO SAN and LAN switch assets

Group	Roles	Responsibilities
		• Performs updates and consistency checks on network devices • Assist customer with execution of migrations • Provide input to migrations approaches • Interface with customer network team
	System Monitor	• Works within the customer monitoring section • Supports all monitoring functions of the project infrastructure through the shared use of Virtual Instruments and other tools like NetApp OCI • Works to ensure remote monitoring and reporting is adequately established and communicating with customer

Figure 11: ViON's Roles and Responsibilities

a) Program Management Planning and Execution.

ViON will plan, structure, staff and operate the project on an ongoing basis to design and implement optimal solutions that adjusts to changing customer business or technical requirements and priorities; is responsive to ad-hoc requests for program and project status; and provides daily feedback on significant issues and/or problem resolutions. In operating the project infrastructure, ViON personnel will focus primarily on meeting the established customer SLAs for both performance and availability and doing so with the highest levels of transparency to the government; only secondarily will the Team make decisions based upon our ease of operation or other constraints.

1) ViON will design, document, operate and maintain a Program Management structure and approach across all contract tasks. This Program Management structure will be designed and managed in a manner consistent with ITIL practices, guidelines, and frameworks.

2) ViON will demonstrate that all of the work performed by the team members under this contract is conducted in accordance with the Information Technology Infrastructure Library (ITIL) v3 service management framework. We understand that the framework will consist of at least the following concentrations:

- Service Strategy
- Service Design
- Service Transition
- Service Operation
- Continual Service Improvement.

3) ViON will adhere to the customer System Development Life Cycle (SDLC) and Enterprise Architecture and Security policies and procedures; federal information technology statutory and administrative mandates/guidance; and all other applicable customer procedures and policies as set out in RFQ: Attachment 8, customer SDLC Standards; Attachment 9, SDLC Policy; Attachment 10, customer Overview of Enterprise Architecture (EA) Governance and Change Control; and Attachment 11, IT Standards. ViON will achieve this adherence by applying and

leveraging "Agile" practices for SDLC, Enterprise Architecture and Security policies and procedures.

4) As part of our continual improvement process, each month ViON will provide a PMR Report documenting the preceding month's activities that will include the preceding month's Call Orders, top identified mission risks and the resulting risk mitigation actions. During the PMR meeting the customer Contracting Officer's Representative (COR) and Program Manager will discuss performance, risk mitigations, upcoming needs, growth projections, and any security, operational and technical concerns. ViON will participate in these monthly PMR meetings with the COR and Program Manager throughout the life of this contract.

5) ViON will develop and maintain a Program Risk Management Plan and a Risk Traceability Matrix as part of the ConOps that quantifies risks with respect to the impact on program development, operational performance, customer application performance, application data, schedule, and cost. Risk information shall include classification and priority. Within the Quality Assurance Surveillance Program (QASP), ViON demonstrates the extensive experience and depth of our customer Program Management. We find these levels of process scrutiny and improvement to be invaluable for maintaining continuous operations.

Risk Classification:

ViON understands that the following risk classifications listed below will be used in order to identify and resolve acknowledged risks. The classifications include: Schedule, Application Data/Functionality, Performance/Quality and Resources.

- Schedule – Project deliverables might be finished late. In the event that ViON identifies Schedule-related risks, we will consider the following mitigation actions:
    - Activities on the critical path
    - Activities that have several dependencies
    - Activities that have minimal float (non-flexible begin and end dates)
    - Activities reliant on external vendors
    - Critical milestones
- Application Data/Scope – (Functionality) The level of performance or capability might be reduced. In the event that ViON identifies Application functionality-related risks, we will consider the following mitigation actions:
    - Completeness of the Statement of Work Document
    - Dynamics of customer requirements
    - Non-standard hardware or software needed
- Application Performance/Quality – The level of quality might be reduced. In the event that ViON identifies Application performance or quality-related risks, we will consider the following mitigation actions:
    - Large number of defects
    - Uncertainty of new product technology

- Resources – The number of resources may be affected. In the event that ViON identifies resource-related risks, we will consider the following mitigation actions:
    - Activities that depend on one person
    - Activities with many people assigned
    - Activities using scarce resources
    - Utilizing resources from other areas

Priority Assessment:

In the event that more than one risk is identified at a given time, ViON will perform a priority assessment, reorganized priorities based on anticipated Impact of that risk.

1) The Risk Traceability Matrix will effectively manage program risks (throughout the life of the contract) that identifies, analyzes, and classifies risk as it relates to the WBS in the project schedule, program development, application data and cost. The risk mitigation exercise will be applied for each risk identified in the risk traceability matrix and provide updates on actions performed via the Strategy Effectiveness and Updated Status fields. The Risk Traceability Matrix shall be included in the PMR Report. The customer COR and Program Manager will consistently review and mitigated risk.

2) As was described above, ViON will review program and operational risks during the Program Monthly Review (PMR) meeting. The customer Governance Activity worksheet will be leveraged in order to identify additional program and operational risks.

3) A risk mitigation plan will be created for every risk. If the risk mitigation plan is acceptable to the ViON Program Manager, the plan is executed. If it is not acceptable, the risk mitigation plan will be escalated to the lead for Capacity Services and revaluated and a new executable plan developed. If no executable option is approved by ViON, the risk mitigation plan will be escalated to customer Program Management Office. The customer Program Management Office will review and provide resolution of all escalated risk mitigation plans. Once the plan is approved, the mitigation plan will be executed, and the risk register will be updated accordingly. ViON will provide a PMR Report that includes the preceding month's findings that include the top risks and risk mitigation plans. The customer COR and Program Manager will discuss program and operational risks and risk mitigations during the PMR meeting

4) In order to disseminate PMR communications, ViON will leverage the following documents: Concept of Operations, Program Monthly Review Report, PMR Meeting, and Problem Notification Letter.

b) Personnel Management. The specific Personnel Management requirements are listed below:

1) ViON will ensure that all personnel assigned to this contract will be U.S. Citizens. In order to maintain and improve proficiency of personnel in their area of work, a staffing plan is provided in Section 6 of the draft Concept of Operations document, which discusses meeting qualifications, staff acquisition, continuing education/training and certifications, performance reviews, as well as recognition and rewards.

2) ViON will provide personnel who possess thorough, practical, and applied experience in order to meet the requirements of the RFQ as well as evolving needs of the customer. Training and Continuing Education are an integral component of the staffing plan.

3) ViON has placed significant emphasis and investment in its people in order to ensure continuity and stability of staff for its customers. ViON recognizes the importance of maintaining a quality workplace, one in which low staff turn-over helps maintain existing contracts as well as the additional investment placed in training and certifications. These efforts have paid off with loyal customers who recognize our commitment to staffing talented individuals. ***ViON has also been recognized externally; we have been designated as one of the Best Places to Work*** by Washington Business Journal every year since 2008.

4) ViON places significant emphasis and investment in its employees in order to ensure continuity and stability of staff for its customers. ViON's employees have an outstanding track record of training and advanced trade certification. ViON provides incentives for employees who attain additional certifications and funds other continuing education activities via bonuses and promotions. ViON's staff currently possess more than 250 advanced technical certifications. To support additional training, ViON maintains two 1500sqft raised floor data center labs with samples of all advanced products and technologies, and three 500sqft classrooms. This high-tech classroom is available to our staff, partners, and customers on a 7 day a week basis.

5) ViON will ensure that all of the Key and required personnel have, at a minimum, the certifications as required by the RFQ in section C.5.1.2 Figure 8. Please see Section 4 of ViON's Technical Response document for they key Personnel Matrix for details on specific certifications.

6) For the project contract, ViON key personnel are required to work out of the government location as the primary site; however, this will be dependent on the available space provided by the customer for use by ViON.

7) ViON will ensure that all Key Personnel work standard hours Monday through Friday of each week (except Holidays and Paid Time Off). Additionally, staffing planning will ensure that selected personnel will be geographically available to report to the primary site as needed. ViON will provide pagers for all Key Team members.

8) In order to manage a contract efficiently and ensure a constant high-quality level of operations, ViON believes it is very important that the Key Personnel have the authority to act on matters relating to their specific areas of program responsibility. Moreover, after announcement of award, the Program Manager will meet with the team internally to discuss and delineate areas of responsibility, cover the communications plan, and ensure that each Key Person understands and is empowered to carry out his or her individual tasks.

9) ViON understands and will comply fully with the security requirements discussed in RFQ. ViON has worked in Federal government spaces for more than three decades in both highly secure and non-secure environments.

10) ViON will provide the Contractor Personnel Report (in a MS Word or MS Excel format) upon project Go-Live and monthly with PMR Report and Invoice Submission. The report will contain:

- Contract Name

- Contract Number and Title
- Company Name
- List of all Personnel on the Project
    - Name
    - Work Telephone
    - Work Cellular
    - Role description
    - Training.

c) Quality and Performance Management - Specific Quality and Performance Management requirements are listed below:

1) ViON has provided a Quality Assurance Surveillance Plan as an attachment to the Concept of Operations.

2) Various surveillance techniques will be used by the customer to monitor project SLAs. ViON discusses, in detail, our surveillance techniques within the Quality Assurance Surveillance Plan.

3) ViON takes quality seriously. As part of the monthly PMR meeting the Program Manager will meet with customer to discuss contract performance, resolve issues, discuss customer complaints, and provide positive interaction and feedback to all parties, as well as a list of any unresolved deficiencies. Specifically, as part of this meeting, the SLA status report will be provided and discussed.

4) ViON will monitor performance against the SLAs as discussed in the Quality Assurance Plan.

5) ViON will provide an SLA status report template at least two weeks prior to project Go-Live. This Report will serve as the template for the monthly SLA Status Report reviewed during the PMR.

6) ViON will participate in any and all reviews of its performance of the contract. Any findings identified by the customer regarding deficiencies related to the program execution or infrastructure will be identified, discussed with ViON, and any corrective actions needed will be taken. In the event that a deficiency is identified by the customer which require and update to ViON's Quality Assurance Surveillance Plan (QASP), ViON agrees to update the QASP accordingly at no expense to the customer.

d) Project Management and Reporting

ViON will aid in the design and performance of large-scale storage migration projects. To ensure these projects are performed in the most effective and efficient manner, ViON will adhere to the project management requirements below:

We will also leverage our Project Plan Evaluation Checklists – as shown below - in order to perform storage-related sub-projects under the contract using Project Management Body of Knowledge (PMBOK)-based methodologies, Project Management Institute best practices and the customer's SDLC processes. ViON will develop individual Project Plans, with critical path and milestones, for specific projects. In order to ensure the project plans we develop are coordinated

with other work and the tasks to be directed by the customer. ViON will deliver updates to project management in the form of the PMR Report.

Program Name	Program Reference Number	Prepared By (print)	Preparer's Initials
Project X			
Customer	Contact	Contact's Phone Numbers	Date Prepared
Government 1			

Requirements	Yes	No	N/A	Remarks
1. Did knowledgeable customers develop the requirements?	☐	☐	☐	
2. Has a gap analysis been conducted to evaluate completeness of the requirements?	☐	☐	☐	
3. Is the confidence level strong that the requirements are accurate and complete?	☐	☐	☐	
4. Are the requirements built with appropriate flexibility to handle change at the program level?	☐	☐	☐	
5. Are performance expectations included as part of the requirements? Are they achievable?	☐	☐	☐	
6. Are the performance levels requested achievable without planned technology advances?	☐	☐	☐	
7. Are the priority and flexibility of the major constraints known and agreed to by the customer? Are they in synch with the program at large?	☐	☐	☐	

Project Plan Elements	Yes	No	N/A	Remarks
1. Does adequate time exist to develop deliverables without broad assumptions?	☐	☐	☐	
2. Will knowledgeable customer personnel be accessible to participate in the project?	☐	☐	☐	
3. Are those customer resources committed by name in the project plan?	☐	☐	☐	
4. Is the correct balance of in-house and vendor resources presented as part of the project plan?	☐	☐	☐	
5. Is an appropriate amount of project management incorporated into the plan?	☐	☐	☐	
6. Are appropriate inter-project relationships established and appropriate interdependencies added to the plan?	☐	☐	☐	
7. Are those interdependencies reflected in any referenced project plan?	☐	☐	☐	
8. Have all statements of work (SOWs) in the project undergone the appropriate reviews at the project and program level?	☐	☐	☐	
9. Are appropriate teaming, mentoring, and training elements included in the plan at the project and program level?	☐	☐	☐	

Figure 12: ViON's PMR Report

Storage Infrastructure Planning

ViON will plan for future storage requirements and needs. The requirements are listed below:

1) ViON will work with the customer to perform demand management activities to ensure capacity estimates are formulated.

2) ViON will work with the customer to perform capacity management activities to plan capacity and infrastructure purchases based on the customer's intermediate and near term storage estimates and expected application implementation timeframes.

3) ViON will collaborate with the customer to develop and implement Demand Management and Capacity Management Standard Operating Procedures (SOPs) for all storage infrastructure engineering efforts.

4) As a normal course of operations, ViON will provide customer estimates of data center power and space based on infrastructure changes to provide the capacity required needed to meet the customer's requirements. ViON understands that the customer will need a minimum of 3 months lead time for power requirements beyond what is currently available, and 6 months lead time for additional physical space.

5) ViON will provide the customer with an updated and detailed Run Book within 5 days of contract award.

f) ViON will provide design and development support for: storage engineering projects, new project migrations, new and emerging technologies, technology evaluations, and senior level consulting to the customer's Server and Storage Services Branch (SSSB). Additionally, ViON's engineering team will serve as the final tier for trouble-shooting challenging and intractable technical problems.

ViON will be proactive in researching trends in storage, software, monitoring tools, and methodologies and will recommend appropriate solutions for the customer. Additionally, we will proactively identify optimization opportunities and develop solutions for customer review and implementation to analyze and identify ways to utilize storage efficiently and consume less power, without sacrificing performance or ability to meet the customer's SLAs. ViON will present findings in conjunction with the PMR and other times requested by the customer.

6) ViON's entire business is centered on keeping abreast of advances in storage technologies and innovations to the types of services offered to the customer. On a quarterly basis, and in conjunction with the PMR, ViON will present our findings to the Government. Additionally, ViON will be prepared to provide additional updates at the government's request. These presentations and findings will help feed the annual Innovation Plan.

Storage Infrastructure Adds and Changes

ViON understands that under project, there will be the need for the storage infrastructure to accommodate changes. ViON will work with the customer to provision new storage hosts for mirroring/copying data to new storage array volumes or other approved method, and for de-provisioning old storage from hosts. We will provide a customized customer Portal that will streamline storage provisioning. Once requested, the action will be documented and tracked. ViON will work the customer to determine the details of the requested provisioning. We will work with the customer staff to physically and logically connect customer host applications to newly provisioned storage and will document procedures along with Port and LUN Mapping information, along with FC switch zoning details.

In the final version of ViON's Draft Run Book, processes will be defined for the following:

a) Configure, connect (physically and logically) and provision new storage to the hosts responsible for new array configuration and volume mapping to present LUNs to the SAN
b) ViON will work with the customer to verify storage provisioning by rescanning LUNS and device paths.

c) ViON will take a phased approach for data migration. For each application server being migrated, application data will be migrated from the customer to the project via the customer's existing SAN fabric connected to our SAN fabric. Once the target data has been migrated to the new infrastructure and successfully tested/verified, host bus adapters (HBAs) connected to the customer's edge switches will be re-cabled and migrated to ViON's switches/SAN fabric. After successful verification, ViON will be responsible for the server's SAN connectivity end-to-end. We will ensure that each of the migrations have no impact on customer applications.
d) ViON will also work with the customer to de-provision storage by un-mapping and un-mounting LUNS from customer hosts. Our partnership with the customer ensures that 100% of the data has been successfully cutover to the new storage devices. Once the migration has been successfully completed, and the customer's hosts have been de-provision from the old storage arrays, a post-migration review will be conducted, and processes will be documented for the customer.

Once storage subsystems are in place at the customer's locations, ViON personnel constantly monitor utilization levels and promptly notify the customer when utilization crosses a pre-defined threshold. In doing this, we ensure that the customer has ample time to place additional capacity requests before existing storage resources are fully utilized. ViON will overprovision storages systems at each customer site to ensure rapid respond to any urgent requirement that may occur. Additionally, we routinely maintain storage inventories in our warehouse that are available to ship at a moment's notice.

We will conduct an extensive review of the transition estimates provided in the SOW in order to come up with a multi-year acquisition plan that will ensure that the customer's storage needs, both planned and unplanned, are met in a timeframe that is compliant with contractual SLAs. Using the forecasted storage growth as a guide, we will work closely with our OEM partners to pre-position assets when necessary to meet demand, taking into account the lead times required for delivery of new equipment. With customer approval, new systems are routinely delivered with additional storage that was not part of customer request (at no charge to the customer) to allow for the rapid increase of storage capacity without the need to order, ship, and deliver additional hardware. This allows for small capacity requests to be met in the shortest possible amount of time. ViON will also proactively identify optimization opportunities and develop solutions for customer review and implementation to analyze and identify ways to utilize storage efficiently and consume less power, without sacrificing performance or ability to meet customer SLAs.

ViON will take a phased approach for data migration. For each application server being migrated, application data will be migrated from the customer to the project architecture via ISL links connecting the customer's existing SAN fabric to our SAN fabric. Once the target data has been migrated to the new infrastructure and successfully tested/verified, host bus adapters (HBAs) connected to the customer's edge switches will be re-cabled and migrated to ViON's switches/SAN fabric. After successful verification, ViON will be responsible for the server's SAN connectivity end-to-end. We will ensure that each of the migrations have no impact on customer applications. ViON will work with the customer to test and verify data migration success. We will also work with the customer to de-provision storage by un-mapping and un-mounting LUNS from customer hosts. ViON's partnership with the customer ensures that 100% of the data has been successfully cutover to the new storage devices. Port and LUN mapping

information, along with fibre channel switch zoning details will be documented and disseminated. We will work with the customer to verify storage provisioning by rescanning LUNS and device paths. Once the migration has been successfully completed, and the customer's hosts have been de-provisioned from the old storage arrays, a post-migration review will be conducted, and processes will be documented for the customer.

ViON key personnel will, because of the distributed nature of the customer functions, roles, and responsibilities, coordinate all data migration activities directly with the customer storage management personnel who will then coordinate between the disparate organizations within the customer organization who are using storage services.

A formal process of submittal, review, discussion, and approval process will be implemented in support of customer hardware, software, and infrastructure changes. ViON will collaborate and communicate consistently with the customer to allow review, correction, and approval of submitted change requests. Change requests can be generated by the customer or ViON Program management. Included will be specifics on the title of the change request, location, equipment type and serial number as well as the customer information like host name or barcode information.

Software, microcode, or facility type information will be included as necessary. Email or other means will be used to submit the change requests to persons or aliases designated by the customer. Requests should include the reasons for the request and procedures that will be used. Time requirements, back out plans, and other impact/risk assessments will be included in the request.

Once a request is submitted for review, confirmation/approval to the requester and groups affected or doing the work should be made via email or other means as agreed to by the customer. During the review meeting the change request will be determined to move forward or be rejected with reasons for rejection. If approved, notification will be sent to the requestor, groups affected and persons responsible for the change. At this time a ticket will be created for tracking purposes until change is completed and successful. Changes to the environment will be tracked by ViON as will outstanding requests not yet approved or completed. ViON will ensure that all infrastructure changes are tested before they are put into production.

Security

ViON will comply with NIST SP800-37 standards for security life cycle approach for information security. This will include the process of the six-step Risk Management Framework (RMF). We will ensure that the project infrastructure meets current, security and privacy requirements defined by the customer, the Department of Commerce, and Federal laws, regulations, and policies.

As required by NIST SP800-37, ViON will also provide security to protect the confidentiality, integrity and availability of information and systems developed and maintained on behalf of the customer, commensurate with the risk and magnitude of harm resulting from unauthorized access, use, disclosure, disruption, modification or destruction. Additionally, we will update and maintain a System Assessment Package (SAP) for the storage infrastructure in accordance with guidance contained in NIST 800-37, Rev 1 or current version.

Along with complying with NIST SP800-37 and SP800-53 standards for security life cycle approach for information security, ViON will perform an independent assessment of its SAP,

independent from the ISSO activities/duties. We will also comply and incorporate the controls for security life cycle approach for information security. After contract award, ViON will discuss with the customer, which controls will be considered Common Controls for our use.

Additionally:

- ViON will deliver a complete SAP to obtain Authorization to Operate (ATO) for inspection and review by the customer's Independent Verification and Validation (IV&V) of the completed SAP to ensure it meets FISMA customer Office of the Inspector General (OIG) compliance using a checklist and review controls. If the controls do not pass the requirement of 80%, we will provide a corrective action plan and is responsible for correcting IV&V review findings at no cost to the customer.
- ViON will use the Cybersecurity Assessment Management (CSAM) tool to manage POA&Ms and to store official security documentation for Department of Commerce and Office of Inspector General (OIG) review, provided by the customer a CSAM account.
- ViON will ensure that after a system has been authorized, any change to the system must be assessed and documented in accordance with OMB Memo 10-15 and 12-20.
- ViON will ensure any new storage design package includes an updated SAP, and the Contractor shall obtain ATO from the customer Security Office prior to implementing material changes to storage infrastructure security.
- ViON will participate and respond to customer OIG-performed security audits.
- ViON will develop and maintain a Security Finding/Incident Report as part of the monthly PMR Report to document all security-related issues identified in the project environment.
- ViON will deliver, after post award, the System Assessment Package (SAP) along with the PMR – Security Finding/Incident Report.

Asset Management

As owners of the project infrastructure, ViON will be responsible for all ordering and receipt of the assets used to perform the duties under this contract. The requirements are listed below.

We will own the project infrastructure. We understand that we are responsible for all ordering and receipt of the assets. ViON will develop and implement asset management procedure in accordance with customer requirements and include these in the final draft of the Run Book.

ViON views the customer as a partner and will work to coordinate and provide a minimum of 48 hours' notice for deliveries of hardware to customer locations. This includes obtaining approval for the removal of any equipment that is part of upgrades, migrations, and other routine tasks.

We will clearly mark each piece of equipment with stickers stating "Owned by ViON Corporation" for easy identification purposes.

ViON will provide the customer a record of the ordered equipment along with instructions that detail the customer's required configuration and mandated system feature validation and recording. This asset information will include data and categories of the following: manufacturer, device type, serial number, version number, and physical and logical location. The Asset

Inventory will be maintained in a readily accessible format that will be available to the customer within 48 hours following any request.

As described previously, ViON will, as a matter of routine, constantly monitor utilization levels, promptly notifying the customer when utilization crosses a pre-defined capacity threshold. We have several methods we will use to ensure rapidity in the process.

ViON will ensure all customer data has been removed from any assets assigned to be disposed. We will complete a Data Erasure Completion Report, detailing the steps taken to remove data from the devices, and provide it to the customer for review, verification, and sign-off. ViON will provide to the customer media and devices that have not been purged or cleared by the guidelines set by the customer to remain onsite for destruction by the customer.

As part of accounting for our business, we document both purchase price/cost and depreciate assets monthly. We agree to sell or lease the entire infrastructure to the customer or a replacement Contractor. Infrastructure would include assets purchased for the customer in accordance with the customer order, but not yet placed in service.

ViON will provide a buy back price for its entire infrastructure when requested by the customer. Price will be calculated as 30 times the current monthly rate minus the number of months that the item has already been in service. If the time in service is 30 months or greater, the repurchase value is zero. Following the sale of all assets, the customer will be responsible for re-licensing all software in accordance with the then-current manufacturer policies for software entitlements and ViON shall have no liability for any costs associated with the customer's purchase.

Service Operations and Maintenance

ViON will provide project operations and maintenance for scheduling, procedures, systems control, and optimization; and performance of system support; and routine, preventive, scheduled and unscheduled actions aimed at preventing equipment failure or decline.

1) ViON will provide 24/7/365 remote and onsite support for all data centers that ensures we meet and exceed the SLAs.

2) ViON will work with customer personnel to connect and enable ESRS (EMC Secure Remote Support) facility which will allow monitoring and managing the storage infrastructure via an out-of-band network.

3) ViON's Operations Manager or assigned designee, during the Operations Managers schedules PTO (Personal Time Off), will be available for the customer's Operation meeting at the designated time and location.

4) ViON will ensure adequate staffing is available for all planned and unplanned activities including after hours and on weekend and holidays when so planned.

5) ViON will adhere to all customer maintenance windows ensuring that scheduled maintenance activities occur at these times or other times as requested by customer personnel

6) ViON will meet and/or exceed the Response Time SLAs when responding to support requests via phone, e-mail, or the customer's remedy system. In addition, ViON will respond to automated Alerts transmitted directly from the equipment. ViON strongly urges the customer to ensure support is requested via phone for all critical incidents.

7) ViON will document and implement, after gaining the customer's approval, all operating and escalation procedures in the final Run Book which will be available to the customer and ViON.

8) ViON, via the Program manager, Operations Manager and other personnel assigned to the account will help to ensure all service level and availability management activities are performed based on our agreed upon and documented processed and procedures.

9) ViON is working closely with and will manage the OEM to ensure all scheduled and Preventative Maintenance procedures, as recommended by them, will be performed.

10) ViON will ensure all hardware and software contracts with the OEM are in place such that all maintenance practices and procedures are performed with OEM specifications.

11) ViON will work with the customer to produce an SLA Status Report and Storage Infrastructure Operational Report that meets the customer's needs as required.

Infrastructure Monitoring and Incident Management

1) ViON will develop, document in the Run Book, and implement monitoring, response and escalation procedures/thresholds that ensure agreed-to SLAs are met and exceeded. Draft Run Book contains ViON's initial methodology for infrastructure monitoring and incident management. ViON will also develop and deliver a Root Cause Analysis Report.

2) ViON will utilize toolsets that utilize automation technology to identify events and potential incidents before they occur. ViON will work with the customer to ensure these alerts are integrated with the customer's monitoring systems as allowed by customer's monitoring system. When these incidents are detected ViON will implement corrective actions with the customer approval.

3) ViON will utilize all available log and monitoring data to identify potential incidents before they occur. When these incidents are detected ViON will bring these to customer personnel and implement corrective actions with the customer approval.

4) ViON will develop, implement, and document in the Run Book all processes and procedures related to incident response, troubleshooting/repair, escalation, and resolution procedures.

5) ViON will use the customer's remedy system to record and respond to incidents as required and allowed by the customer.

6) ViON will respond within the "Response" timeframe as defined in the project SLAs. ViON understands how outages are measured by the customer. ViON is dedicated to the reduction and/or the elimination of all outages.

7) ViON will provide root cause analysis and resolution for all incidents as required by the customer.

8) ViON will work with all vendors, the customer, and any assigned contractor personnel to identify and solve and incidents related to storage issues or problems

9) ViON personnel will provide communication and updates as required by the customer on any and all outages. These communications will be done face to face, by phone, or e-mail as required by the customer.

Problem Management and Performance Tuning Problem Management

ViON will constantly discover, document, and disseminate the identification, management, and resolution of problems that affect service quality, availability, and efficiency.

1) ViON will document baseline performance metrics for the environment and will monitor for negative deviations from that level. Deviations will be resolved, and changes or corrections will be made to restore or enhance the baseline levels using best practices, new versions of hardware/software and improvements to connectivity as recommended by the findings.

2) ViON will generate root cause analysis for severe events as well as pervasive and or advanced performance issues using our highly-trained and experienced engineers, extensive knowledge base, specific vendor engineering partnerships, diagnostics and comparative findings based on baseline documentation

3) ViON will proactively look for new hardware, software and infrastructure products that will better perform and utilize storage, network, processes, and application resources. As needed, we will test, document, and recommend changes or enhancements to the environment providing the customer the Best of Class performance they expect.

4) Based on customer requests or findings from ViON's monitoring will document and test corrective action or enhancements to the environment. ViON will provide an action plan for preparation, risk, implementation and monitoring the solution for customer review and approval. Rollout plans, as well as a fallback process, will be included in the planning, documentation, and testing. Post implementation problems will be included in the Rollout documentation and process. Customer-required change management processes will be used.

5) ViON will provide complete documentation for baseline performance, proposed corrections and enhancements, testing, implementation, and fallback. For problems requiring root cause analysis, ViON will document the problem, the steps taken to correct, the timeline of events and any "lessons learned".

Continuity of Operations (COOP) and Disaster Recovery Support

1) ViON will provide the required technical operational support for COOP and disaster recovery planning. COOP/Disaster recovery planning is part of the foundation of our offerings. We conduct DR planning sessions with customers across the Federal Government, from the US Intelligence Community to the Department of Homeland Security. ViON draws on all these experiences to provide key contributors to planning for the customer.

2) ViON will provide the skills and talent to properly document all aspects of a COOP/DR Plan developed specifically for the project architecture. We will document all the procedures including test results and analysis of those results. This includes suggestions and recommendations that will be provided through the Continuity of Operations Plan (COOP)/Disaster Recovery (DR) Plan and the COOP/DR Test Plan and Results.

Contract Transition-Out

ViON expects that the government will be satisfied with the execution of the contract. From experience, we understand that it will take time for both the customer and ViON to become comfortable with the processes involved in any new Managed Service environment/relationship. Should the contract end or transfer to another vendor at some point, ViON will support a transition-out posture.

We further expect that if Transition Out is executed, the customer will have a follow-on contract that is prepared to be in place. The customer can place new orders against the new contract should the need arise and decommission storage from the contract. At the end of the option years of the contract, or cancelling a call order, ViON shall be responsible for the removal of all ViON-owned equipment related to this contract at no cost to the Government.

As stated earlier, ViON agrees to sell or lease the entire infrastructure to the customer or a replacement Contractor at the expiration of the contract. The project infrastructure would include assets purchased for the customer per the customer order, but not yet placed in service. We will provide a buy back price for its entire infrastructure when requested by the customer. Price will be calculated as 30 times the current monthly rate minus the number of months that the item has already been in service. If the time in service is 30 months or greater, the repurchase value is zero.

Following the sale of all assets, the customer will be responsible for re-licensing all software in accordance with the then-current manufacturer policies for software entitlements and ViON shall have no liability for any costs associated with the customer's purchase.

ViON understands that, upon proper notice from the customer regarding expiration of the contract, a Transition-Out Plan will be finalized by ViON. This Plan will include: the Transition-Out Approach (whether to the customer or a follow-on Service Provider), asset transition/purchase approach and details, transition and deployment schedule listing all pertinent activities, interim service solution approach, transition staffing and risk mitigation, escalation procedures, status reporting, and a Transition-Out Readiness Checklist.

Further, ViON understands that, at the end of Transition-Out and before final billing, ViON will prepare a Transition-Out Report that details the successful transfer of sufficient knowledge of all project components and activities need by the customer or a follow-on Contractor to fully perform on-going operations.

APPENDIX B – COPY OF MAINTENANCE CONTRACT

ViON provides a copy of our Maintenance Contract in response to 4.2.4.2.7 on the following pages.

ProSupport Plus for Enterprise

Introduction

Dell EMC[1] is pleased to provide ProSupport Plus for Enterprise (the "**Service(s)" or "Support Services**") in accordance with this Service Description ("**Service Description**"). Your quote, order form or other mutually-agreed upon form of invoice or order acknowledgment from Dell EMC (the "**Order Form**") will include the name(s) of the Product(s)[2], applicable Service(s) and related option(s), if any. 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 Customers who purchase from Dell under a separate Agreement that authorizes the sale of these Services, the Dell Services Terms & Conditions Supplement[3] also applies to these Services. For a copy of your agreement with your applicable Dell EMC reseller, contact that reseller.

The Scope of This Service

The features of this Service include:

- Access on a 24x7 basis (including holidays)[4] to a specialized Dell EMC technical support resource from the Dell EMC Customer Service and Support organization for troubleshooting assistance of Products.

  On-site dispatch of a technician and/or delivery of replacement parts to the Installation Site or other Customer business location approved by Dell EMC as detailed in the Agreement (as necessary and according to support option purchased) to address a Product problem.

- Access to a remote Technology Service Manager (TSM).

Please review the table below for more details.

How to Contact Dell EMC if You Require Service

Online, Chat, and Email Support: Dell EMC website, chat, and email support available for select products at https://www.dell.com/support.

Telephone Support Requests: Available on a 24x7 basis (including holidays). Availability may differ outside of the United States and is limited to commercially reasonable efforts unless otherwise specified in this document. Visit https://www.dell.com/support for a list of applicable telephone numbers for your location.

The following chart lists the service features of ProSupport Plus for Enterprise provided under Dell EMC's warranty and/or maintenance terms. ProSupport Plus for Enterprise is available to support and maintain:

1. Dell EMC Equipment which is identified on the Dell EMC Product Warranty and Maintenance Table and/or on your Order Form as

   including ProSupport Plus for Enterprise during the applicable warranty period; or

   eligible for upgrade to ProSupport Plus for Enterprise during the applicable warranty period; or

   eligible for ProSupport Plus for Enterprise during a subsequent maintenance period.

2. Dell EMC Software which is identified on the Dell EMC Product Warranty and Maintenance Table and/or on your Order Form as eligible for ProSupport Plus for Enterprise during a maintenance period.

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[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.

[2] As used in this document, "Dell EMC Products", "Products", "Equipment" and "Software" means the Dell EMC Equipment and Software identified on the Dell EMC Product Warranty and Maintenance Table or on your Order Form, and "Third Party Products" is defined in your Agreement, or in the absence of such definition in your Agreement, in the Dell EMC Commercial Terms of Sale, or your local Dell EMC terms of sale, as applicable. "You" and "Customer" refers to the entity named in the purchaser of these Services named in the Agreement.

[3] To review the Dell Services Terms of Sale Supplement, please go to https://www.dell.com/servicecontracts/global, choose your country and select the Support Services tab on the left hand navigation column of your local country page.

[4] Availability varies by country. Contact your sales representative for more information.

SERVICE FEATURE	DESCRIPTION	PROSUPPORT PLUS—COVERAGE DETAILS
GLOBAL TECHNICAL SUPPORT	Customer contacts Dell EMC by telephone or web interface on a 24x7 basis to report an Equipment or Software problem and provides input for initial assessment of Severity Level*. Dell EMC provides (i) a response by remote means using a senior level Dell EMC technical support resource for troubleshooting assistance based on the Severity Level of the problem; or (ii) when deemed necessary by Dell EMC, Onsite Response as described below.	Included.
ONSITE RESPONSE	Dell EMC sends authorized personnel to Installation Site to work on the problem after Dell EMC has isolated the problem and deemed Onsite Response necessary.	Included for Equipment only. Initial Onsite Response objective is based on the option purchased by the Customer. The options available to the Customer are the following; either 1) a four-hour service response during the same business day, or 2) a service response during the next local business day, during normal business hours, after Dell EMC deems Onsite Support is necessary. 4-Hour Mission Critical On-site Response Typically arrives on-site within 4 hours after completion of telephone-based troubleshooting. • Available seven (7) days each week, twenty-four (24) hours each day - including holidays. • Available within defined four (4) hour response locations. • 4 Hour parts locations stock essential operational components, as determined by Dell EMC. Non-essential parts may be shipped using overnight delivery. • Ability to define if the issue is a Severity 1 upon remote supports initial diagnosis • Critical situation procedures - Severity level 1 issues are eligible for quick Escalation/Resolution Manager and "CritSit" incident coverage. • Emergency dispatch - onsite service technician dispatched in parallel with immediate phone-based troubleshooting for Severity 1 issues. Next Business Day On-site Response Following telephone-based troubleshooting and diagnosis, a technician can usually be dispatched to arrive on-site the next business day. • Calls received by Dell EMC after local cutoff at Customer site local time may require an additional business day for service technician to arrive at Customer's location. • Available only on select models of Products. Onsite Response does not apply to Software and may be separately purchased.

*SEVERITY LEVEL DEFINITIONS

SEVERITY 1 Critical – loss of ability to perform critical business functions and requires immediate response

SEVERITY 2 High – able to perform business functions, but performance/capabilities are degraded or severely limited.

SEVERITY 3 Medium/Low – little to no business impact.

REPLACEMENT PARTS DELIVERY	Dell EMC provides replacement parts when deemed necessary by Dell EMC.	Included. Replacement parts delivery objective is based on the option purchased by the Customer. The options available to the Customer are the following; either 1) a four-hour service response during the same business day, or 2) a service response during the next local business day, during normal business hours, after Dell EMC deems that a replacement part delivery is necessary Local country shipment cut-off times may impact the same day/next local business day delivery of replacement parts. Installation of all replacement parts performed by Dell EMC as part of Onsite Response, but Customer has option to perform installation of Customer Replaceable Units (CRUs). See Dell EMC Product Warranty and Maintenance Table for listing of parts designated as CRUs for specific Equipment or contact Dell EMC for more details. If Dell EMC installs the replacement part, Dell EMC will arrange for its return to an Dell EMC facility. If Customer installs the CRU, Customer is responsible for returning the replaced CRU to a facility designated by Dell EMC.
PROACTIVE SOLID STATE DRIVE REPLACEMENT	Included for Storage and Converged Products. If the Endurance Level (as defined below) for any solid-state drive prior to the device reaching its full capacity or less (as determined by Dell EMC) the Customer is eligible to receive a replacement solid state drive. Endurance Level means the average percentage of life span remaining on the eligible SSD.	Included. Response objective is based on the applicable Replacement Parts Delivery and Onsite Response service features detailed above. Customer must activate and maintain the currently supported version(s) of SupportAssist and/or Secure Remote Support software during the applicable term of support. SupportAssist and/or Secure Remote Support enablement, as applicable is a prerequisite for these additional renewal service features.
RIGHTS TO NEW RELEASES OF SOFTWARE	Dell EMC provides the rights to new Software Releases as made generally available by Dell EMC.	Included.
INSTALLATION OF NEW SOFTWARE RELEASES	Dell EMC performs the installation of new Software Releases.	Included for Software which Dell EMC determines is Equipment operating environment Software[5] and only when the associated Equipment into which the operating environment Software is being installed is covered by an Dell EMC warranty or then current Dell EMC maintenance contract. Equipment operating environment Software is defined as software programming and/or microcode firmware needed to enable the Equipment to perform its basic functions, and without which the equipment cannot operate. Customer performs the installation of new Software Releases of Software (that is, Software not classified as Equipment operating environment Software, or Equipment operating environment software that is deemed by Dell EMC to be self-installable), unless otherwise deemed necessary by Dell EMC.

[5] Installation of new Software Releases for the Dell EMC Converged and Hyperconverged Infrastructure systems, including but not limited to software versions posted on applicable interoperability configuration matrices (The Dell EMC Simple Support Matrix or the Release Certification Matrix) may require the purchase of a separate services engagement from Dell EMC. The Simple Support Matrix and Release Certification Matrix includes list of certified versions of software, firmware, and hardware for a specific releases available at https://support.emc.com/products/42676_VxRack-SDDC and https://cpsdocs.dellemc.com/rcm/#/home, respectively.

24X7 REMOTE MONITORING AND REPAIR	Certain Products will automatically and independently contact Dell EMC to provide input to assist Dell EMC in problem determination. Dell EMC remotely accesses Products if necessary for additional diagnostics and to provide remote support.	Included for Products that have remote monitoring tools and technology available from Dell EMC. Once Dell EMC is notified of a problem, the same response objectives for Global Technical Support and Onsite Response will apply as previously described.
24X7 ACCESS TO ONLINE SUPPORT TOOLS	Customers who have properly registered have access on a 24x7 basis to Dell EMC's web-based knowledge and self-help Customer support tools via the Dell EMC Online Support site.	Included.
TECHNOLOGY SERVICE MANAGER ("TSM")	The ProSupport Plus for Enterprise assigned TSM is a remote resource that provides a wide range of system, environmental and account management features and capabilities designed to reduce downtime and improve the overall support experience from Dell EMC. Included with the Service: Onboarding assistance: Ensuring the customer is fully enabled to receive the ProSupport Plus service by: ➢ Verifying the accuracy of relevant Customer support information such as account name, address, etc. ➢ Providing knowledge transfers such as how to contact Dell EMC to open service requests and use of Dell EMC support tools and technologies ➢ Designating schedule for TSM deliverables such as reporting and service reviews Monthly Reporting: Reporting and recommendations on entitled systems including: ➢ Summary of open and closed service requests by month; ➢ Verification of currently installed system software versions against target code recommendations; and ➢ Contract status, including start/end dates and other basic contract details. In order to fully enable monthly reporting, Dell EMC connectivity technologies such as SupportAssist and/or Secure Remote Support must be installed with the appropriate log collection options enabled	Included on Products covered by ProSupport Plus for Enterprise service or then current maintenance contract during Dell EMC's normal local business hours which may vary by region and country, excluding Dell EMC and local holidays. See additional Coverage Details below. Dell EMC is responsible for performing only the TSM activities and tasks expressly specified in this document. All other tasks, activities and services are out of scope.

TECHNOLOGY SERVICE MANAGER ("TSM") CONTINUED	Service Review: The TSM provides a service review of the details in the Service Report. Schedule, timeframe and other topics to be reviewed will be determined between the TSM and the Customer during Onboarding. System Maintenance For entitled assets, the TSM will assist Customer in coordinating delivery of System Maintenance events within the Customer's maintenance window. See below for additional information. Dell EMC Escalation Support: Acting as the Services liaison to coordinate all resources necessary to address individual Severity 1 issues or more systemic problems.

Customer Responsibilities for TSM Service Feature

Dell EMC's provision of the TSM service feature detailed above is contingent upon the Customer fulfilling the following responsibilities:

- Making an appropriate system maintenance window(s) available for the TSM as deemed necessary by Dell EMC.
- Ensuring that all environment, technical and operational requirements are met.
- Providing the TSM with timely access to (a) at least one technical contact with system administration responsibilities and appropriate system/information access privileges, and (b) applicable subject matter experts, systems and networks (including, without limitation, remote systems/ network access) as deemed necessary by Dell EMC.
- Assuming all responsibility for network connectivity, performance, and configuration issues.
- Verifying that the Equipment location(s) is/are prepared prior to the commencement of ProSupport Plus for Enterprise.

Additional important information on TSM Service Feature

- Availability of the TSM service is during normal business hours. Business hours are defined by the location where the TSM resides and may vary by region and country. At Dell EMC's discretion and when deemed necessary by Dell EMC, TSM services may be performed onsite.
- Afterhours support may be provided by other resources within Dell EMC at Dell EMC's discretion.
- The location of the TSM will be assigned during on-boarding based on Customer's preferred service area and staffing availability.

PROSUPPORT PLUS FOR ENTERPRISE SYSTEM MAINTENANCE

ProSupport Plus System Maintenance provides Dell EMC customers with necessary remote maintenance events occurring during the term of the service contract on devices covered by ProSupport Plus for Enterprise and monitored under applicable Dell EMC connectivity technology, such as SupportAssist and/or Secure Remote Services, as applicable. System maintenance helps maintain performance and may reduce the likelihood of future incidents due to incompatible hardware, software, BIOS, and firmware versions. System Maintenance events are coordinated between the customers, the TSM and Dell EMC support personnel. Delivery of System Maintenance is generally available 24x7x365, but may be subject to mutual customer and Dell EMC resource availability. Dell recommends System Maintenance occur twice per year. Certain Products may have limitations on the number of times System Maintenance may be performed per year. Please consult with your sales representative or assigned TSM for a list of supported Products and any applicable limitations.

Not Included in ProSupport Plus for Enterprise System Maintenance

- Updates on interconnected devices not covered by a current ProSupport Plus for Enterprise support contract.
- Updates on any software without corresponding entitlement to such updates under an appropriate, software support contract by either Dell or a third party for select Third Party Products.
- Operating System and hypervisor patch creation or other related engineering or software development support.
- Creation of application patches.
- Onsite delivery of maintenance.
- De-installation or installation of additional hardware, or configuration tasks.
- Installation or configuration of software not specifically listed in this Service Description
- Application performance tuning.
- Virus, spyware, or malware identification or removal.
- Any other updates or other activities not specifically documented within this Service Description.

Additional Important Information about ProSupport Plus for Enterprise System Maintenance

- During the maintenance event, upgrades may cause a temporary loss of connectivity to other attached devices.
- After completion of the upgrade attached devices may need to be rebooted and connectivity verified.
- System(s) to be upgraded must be made available to Dell EMC or Dell EMC-authorized agents during the agreed upon maintenance window.
- Depending on the system(s) to be upgraded an additional system management system or resource may need to be made available.
- Depending on the system(s) to be upgraded appropriate administrative rights to the device may need to be provided to Dell EMC or Dell EMC authorized agents.
- Customer is responsible for having and maintaining all license requirements pertaining to Equipment and Software updates.
- In the event that updating Software on entitled Product could cause degradation or impact performance on other unentitled Product, Dell EMC in consultation with the customer may choose to not proceed with the System Maintenance activity until that situation is resolved.
- In order to fully enable ProSupport Plus for Enterprise System Maintenance, applicable connectivity technology such as Dell EMC SupportAssist and/or Secure Remote Support must be installed with log collection options enabled.

COLLABORATIVE ASSISTANCE

If a Customer opens a service request and Dell EMC determines that the problem arises with an eligible third-party vendor's products commonly utilized in conjunction with Products covered by a current Dell EMC warranty or maintenance contract, Dell EMC will endeavor to provide Collaborative Assistance under which Dell EMC: (i) serves as a single point of contact until the problems are isolated; (ii) contacts the third-party vendor; (iii) provides problem documentation; and (iv) continues to monitor the problem and obtain status and resolution plans from the vendor (where reasonably possible).

To be eligible for Collaborative Assistance, Customer must have the appropriate active support agreements and entitlements directly with the respective third-party vendor and Dell EMC or an authorized Dell EMC reseller. Once isolated and reported, the third-party vendor is solely responsible to provide all support, technical and otherwise, in connection with resolution of the Customer's problem. **Dell EMC IS NOT RESPONSIBLE FOR THE PERFORMANCE OF OTHER VENDORS' PRODUCTS OR SERVICES**. A list of

Collaborative Assistance partners can be found on the Collaborative Assistance List . Please note that supported third-party products may change at any time without notice to Customers.

DELL EMC SYSTEM SOFTWARE SUPPORT

Dell EMC Software support included within ProSupport Plus for Enterprise provides support for select Third Party Products, including select end-user applications, operating systems, hypervisors and firmware when such Third Party Products are 1) used with and are currently installed and operating on Products at the time that support is requested, and 2) covered by an existing ProSupport Plus for Enterprise support and maintenance term of service. This level of support is provided on entitled ProSupport Plus for Enterprise Equipment, regardless of how the eligible software was purchased and licensed, but Customer is responsible for ensuring that such eligible software was purchased and licensed properly according to the publisher. Customer is solely responsible for correcting any problems with licenses and purchases of eligible software to be eligible to receive these Services at any time during the coverage period. A list of eligible software can be found on the Comprehensive Software Support List. Please note that supported Third Party Products may change at any time without notice to Customers. Situations giving rise to Customer's questions must be reproducible on a single system, which may be physical or virtual. Customer understands and accepts that resolutions of certain issues giving rise to Customer's service request may not be available from the publisher of the relevant software title and may require support from the publisher, including installation of additional software or other changes to Products, Customer accepts that in such situations where no resolution is available from the publisher of the relevant software title, Dell's obligation to provide support to the Customer will be fully satisfied.

Additional Terms and Conditions Applicable to End Users Purchasing Product(s) from an OEM

An "OEM" is a reseller who sells the Supported Products in a capacity as an original equipment manufacturer that is purchasing Dell EMC Products and Services from the OEM Solutions (or its successor) business group for an OEM project. An OEM typically embeds or bundles such Dell EMC Products in or with OEM Customer's proprietary hardware, software or other intellectual property, resulting in a specialized system or solution with industry or task-specific functionality (such system or solution an "OEM Solution") and resells such OEM Solution under OEM's own brand. With respect to OEMs, the term "Supported Products" includes Dell EMC Supported Products that are provided without Dell EMC branding (i.e. unbranded OEM-ready system), and "End-User" means you, or any entity purchasing an OEM Solution for its own end-use and not for reselling, distributing or sub-licensing to others. It is OEM's responsibility to provide first level troubleshooting to the End User. An appropriate best-effort initial diagnosis should be performed by OEM before the call goes to Dell. This OEM maintains responsibility for providing the initial troubleshooting even when its End User engages Dell EMC to request service, and if an End User contacts Dell EMC for service without contacting their OEM, Dell EMC will ask the End User to contact their OEM to receive first level troubleshooting before contacting Dell.

Dell EMC ProSupport Plus for Enterprise on Non-Standard Parts in Custom Server Products

The repairs and exchanges of non-standard or unique parts ("Non-Standard Component Support Services") are a value-added exchange service complementing Customer's PowerEdge Product warranty that covers standard Dell EMC components in a standard configuration, and that require replacement due to defects in workmanship or materials ("Warranty Repairs"). Dell EMC branded firmware/software for "Non-Standard Components" is NOT available, and the Customer must use manufacturer provided utilities to monitor and/or update the component. The Customer will also work with the manufacturer directly to resolve any quality issues related to software/firmware, utilities, and hardware. Dell EMC will provide Non-Standard Support Services to replace non-standard or unique parts that Customer forecasted and guaranteed to be available as set forth above, and once Customer has made corresponding arrangements to assist Dell EMC in placing any orders for service stock in order to facilitate repair activity. Provided Customer has accurately forecasted stocking needs, and Dell EMC is not liable to Customer to ensure part availability, Dell EMC will exchange the part that exhibits a defect according to the Customer's applicable response time for Warranty Repairs and install the replacement part in the Customer's Product. Same day (e.g. 4 hour) parts and field response may not be available for "non-standard" component replacement, and Dell EMC will default to Next Business Day Service in these cases. Replacement parts may be new or refurbished as permitted by local law, and fulfillment of Non-Standard Component Support Services repairs and exchanges may require Dell EMC to utilize a third party manufacturer/third party publisher's warranty and/or maintenance services, and Customer agrees to assist Dell EMC and provide any materials requested by any third party manufacturer or third party publisher to facilitate utilization of the corresponding third party warranty and/or maintenance services.

Dell EMC's engineering testing of the resulting configuration pursuant to a separate statement of work (SOW) after installation of the non-standard or unique parts, software requested by Customer is a point in time activity and the Non-Standard Component Support Services are available only on the specific configuration as defined by Customer and tested by Dell EMC. Dell EMC will communicate the exact hardware configuration tested including firmware levels. Once engineering testing is complete Dell EMC will provide the results via reports with indication of Pass/Fail. Dell EMC will use commercially reasonable efforts to support recognition and operation of the non-standard component on the Dell EMC Product, however modification of Dell EMC standard utilities (including BIOS, IDRAC, and SupportAssist) will not be supported. Customer will be responsible for working with the manufacturer directly to resolve any non-standard component issues which arise during engineering testing (including quality issues, software, firmware, or hardware specifications/limitations). Additional Dell EMC engineering testing after Customer has received a report with an indication of PASS will require a new SOW and associated non-recurring engineering fees, including any engineering testing requested in connection with a repair or replacement of any component of the configuration during the warranty term of the Customer's Equipment.

Other Details about Your Service

The warranty periods and support options ("Support Information") on this website apply (i) only between Dell EMC and those organizations that procure the applicable products and/or maintenance under a contract directly with Dell EMC (the "Dell EMC Customer"); and (ii) only to those products or support options ordered by the Dell EMC Customer at the time that the Support Information is current. Dell EMC may change the Support Information at any time. Other than changes caused by publishers and manufacturers of Third Party Products, the Dell EMC Customer will be notified of any change in the Support Information in the manner stated in the then current product ordering and/or maintenance related agreement between Dell EMC and the Dell EMC Customer, but any such change shall not apply to products or support options ordered by the Dell EMC Customer prior to the date of such change.

Dell EMC will have no obligation to provide Support Services with respect to Equipment that is outside the Dell EMC Service Area. "Dell EMC Service Area" means a location that is within (i) one hundred (100) drivable miles of an Dell EMC service location for Storage and Data Protection Equipment and/or components; and (ii) the same country as the Dell EMC service location, unless otherwise defined in your governing agreement with Dell EMC, in which case the definition in the governing agreement prevails.

This Service is not available at all locations. If your Product is not located in the geographic location that matches the location reflected in Dell EMC's service records for your Product, of if configuration details have been changed and not reported back to Dell EMC, then Dell EMC must first re-qualify your Product for the support entitlement you purchased before applicable response times for the Product can be reinstated. Service options, including service levels, technical support hours, and on-site response times will vary by geography and configuration, and certain options may not be available for purchase in Customer's location, so please contact your sales representative for these details. Dell EMC's obligation to supply the Services to relocated Products is subject to various factors, including without limitations, local Service availability, additional fees, and inspection and recertification of the relocated Products at Dell EMC's then-current time and materials consulting rates.

Products or services obtained from any Dell EMC reseller are governed solely by the agreement between the purchaser and the reseller. That agreement may provide terms that are the same as the Support Information on this website. The reseller may make arrangements with Dell EMC to perform warranty and/or maintenance services for the purchaser on behalf of the reseller. Please contact the reseller or the local Dell EMC sales representative for additional information on Dell EMC's performance of warranty and maintenance services on Products obtained from a reseller.

CONTACT US

To learn more, contact your local representative or authorized reseller.

Rev. June 18, 2019

APPENDIX C – PANDUIT IPI TROUBLESHOOTING GUIDE

ViON provides documentation of our Panduit IPI Troubleshooting Guide in response to Section 4.2.1.1.8 on the following pages.

Dell EMC IPI Appliance Troubleshooting Guide

Contents

PDUs

Lost Comms

There are two basic reasons why you may see 'Lost Comms' messages from PDU ports.

1. The PDU port is enabled, but does not have a PDU physically connected, in which case the port can be disabled.
2. The connection between the Dell EMC IPI Appliance PDU port and the PDU has become defective in some way.

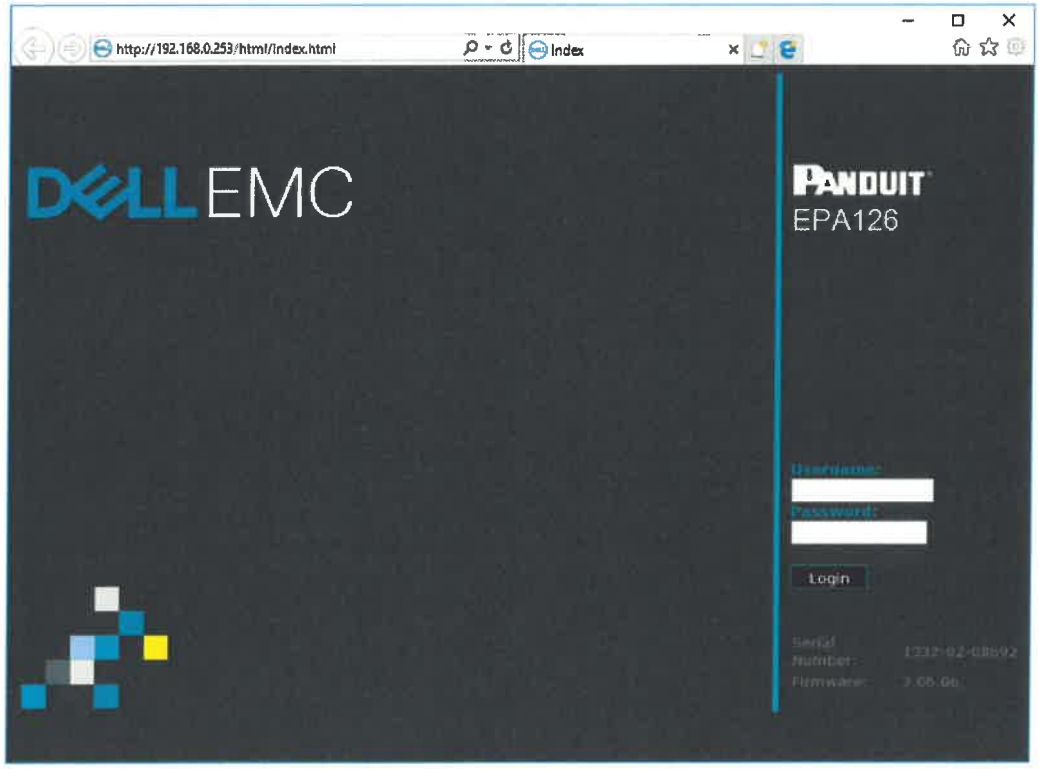
Resolution

1. PDU Port Enabled but PDU not physically connected

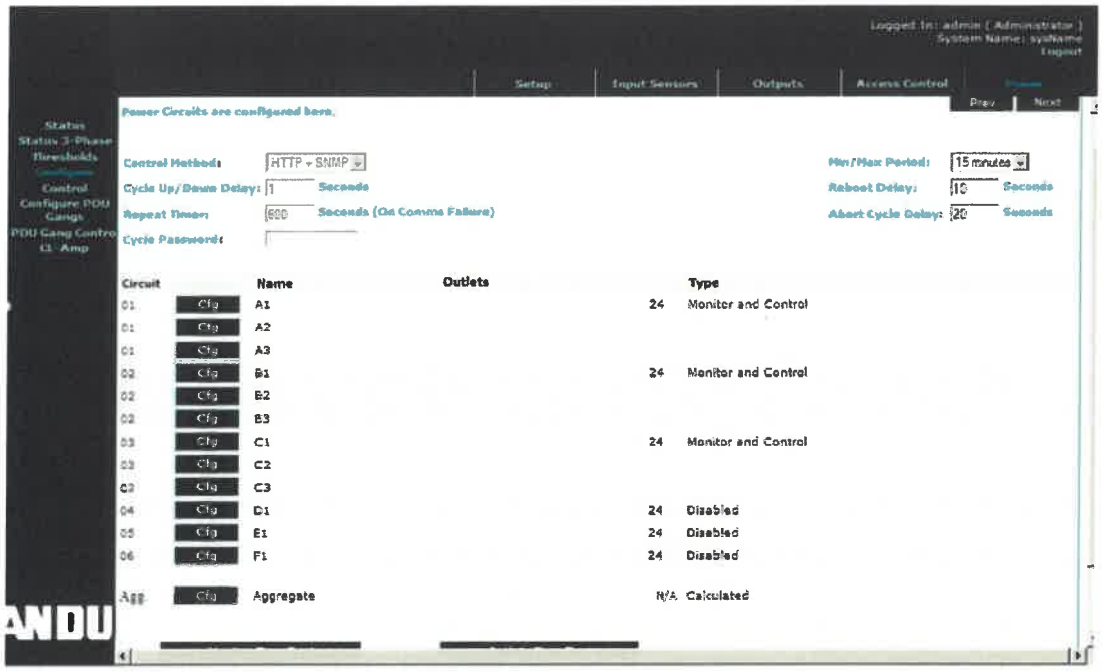
   In this situation, the unused PDU ports may be enabled, but not physically connected to a PDU.

   Example: a cabinet may contain 2 PDUs, but all 6 PDU ports may be enabled in the IPI Appliance, meaning that the 4 unconnected ports will generate 'Lost Comms' alerts.

   A. Point your browser at the IP address for the IPI Appliance to get to the IPI Appliance login page as follows:



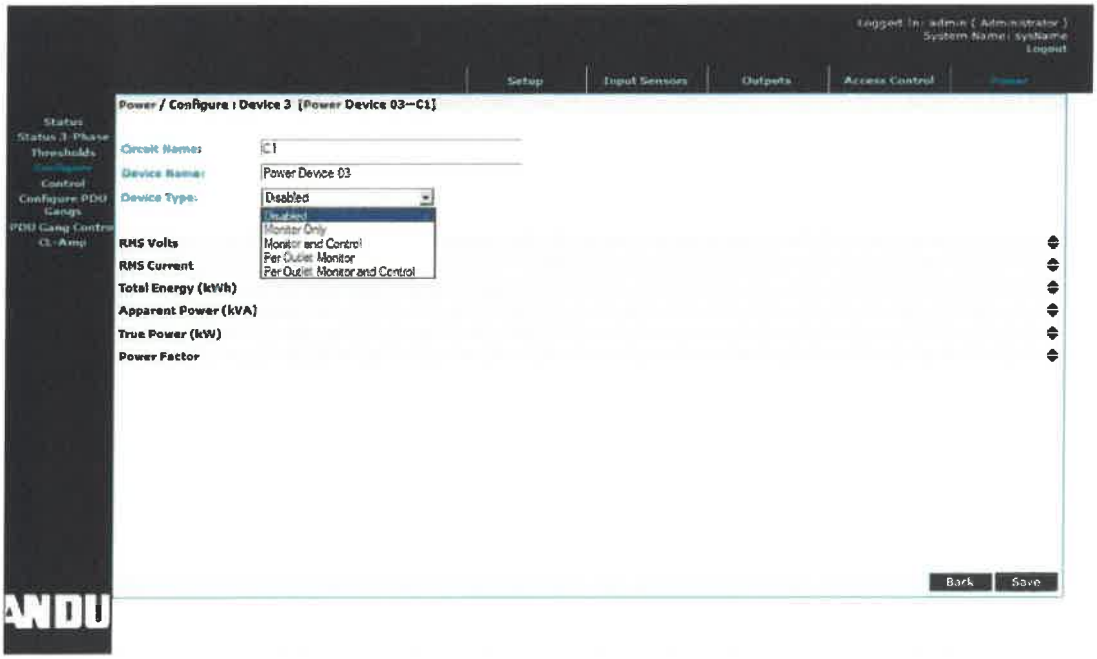
   B. Login with the relevant credentials.
   C. Navigate to the Power>Configuration screen as shown below:



D. Then select the relevant CFG box next to the PDU port which needs to be disabled.

E. NOTE – If only 2 POU's are physically connected, to say ports 1 and 4 for example, then ports 2,3,5, and 6 need to be disabled to prevent 'Lost Comms' alerts from these ports.

F. Selecting the port will take you to the screen shown below, Set the Device Type field to Disabled.



This should prevent any further "Lost Comms" alerts from the disabled ports.

2. Physical connection between IPI Appliance and PDU is defective

If there is a problem with the physical connection between the IPI PDU port and the physical PDU, you are likely to see 'Lost Comms' alerts from the IPI Appliance.
If all unused ports have been disabled as described in *Resolution 1* above, then the next step is to check the physical connections.

A. Firstly, check which port is generating the alert, by examining the SNMP trap and/or email notification details, this will detail which port is generating the alerts.
B. At the IPI Appliance end, check that there is a patch cable connected to the PDU port that is generating the alert.
C. If the IPI Appliance connection is present and is secure, now check the relevant patch cable is connected to the PDU monitoring port on the PDU itself.

D. If the above connection looks good – check that the LCD panel on the PDU is lit and displaying values, if it is not, replace the patch cable between the PDU and the IPI Appliance.
E. If replacing the cable does not resolve the issue, then there may be a more significant hardware issue, please report this to Panduit Technical Support at systemsupport@panduit.com who will advise regarding next steps.

Sensors

"Lost Comms"

There are two basic reasons why you may see "Lost Comms" messages from Sensor ports.

1. The Sensor port is enabled, but does not have a Sensor physically connected, in which case the port can be disabled.
2. The connection between the IPI Appliance Sensor port and the Sensor has become defective in some way.

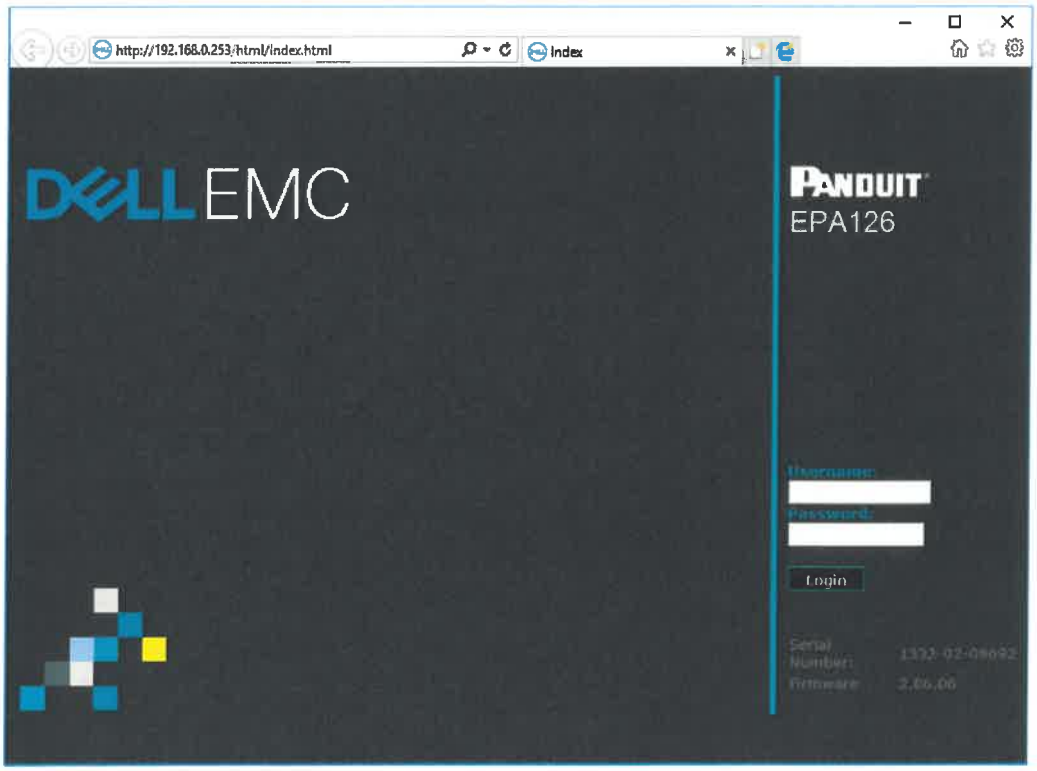
Resolution

1. Sensor Port Enabled but Sensor not physically connected

In this situation, the unused Sensor ports may be enabled, but not physically connected to a Sensor.

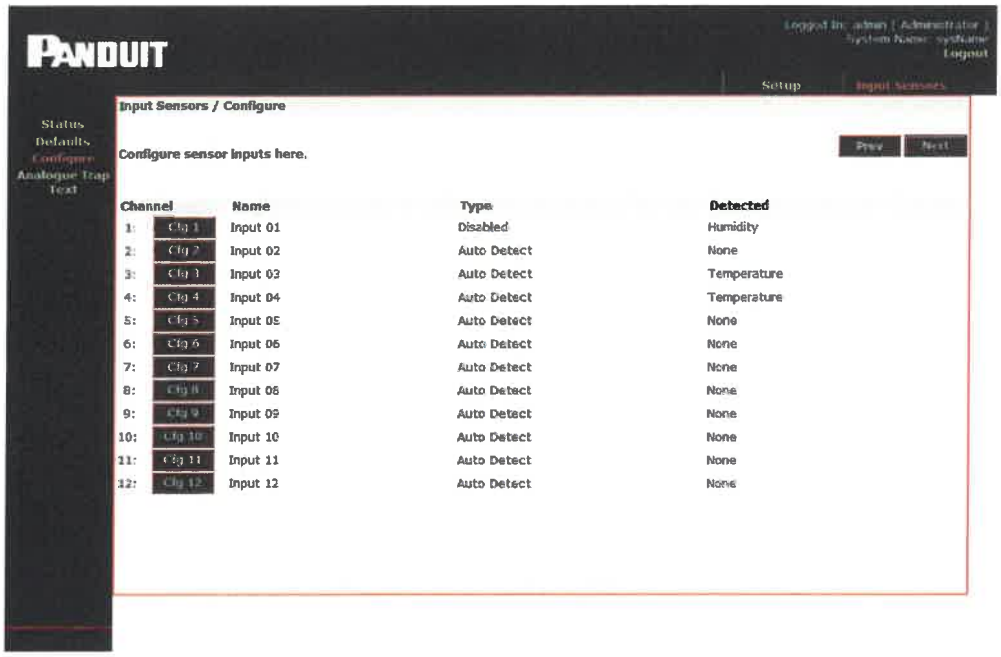
Example: a cabinet may contain 3 Temperature Sensors, but all 6 Sensor ports may be enabled in the IPI Appliance for Temperature Sensors, meaning that the 2 unconnected ports will generate 'Lost Comms' alerts.

A. point your browser at the IP address for the IPI Appliance to get to the IPI Appliance login page as follows:



B. Login with the relevant credentials

C. Navigate to the Input Sensors>Configure screen as shown below:



D. Then select the relevant CFG box next to the Sensor port which needs to be disabled.

E. Selecting the port will take you to the Configuration Port screen. Set the Device Type field to Auto Detect.

This should prevent any further "Lost Comms" alerts from the Unused ports.

Traps not being received by Vision or another Management system

– Symptoms:

Vision not receiving events/alarms from IPI Appliance or health status lost

– Action:

- Check if IPI Appliance has any active events

- Check if the Enable flag has been turned off in Input Sensors -> Configure screen
- Check IPI Appliance SNMP Rec'rs tab and verify IP, Community strings, and Access
- Send a test alarm to the SNMP receiver

Temperature sensor reporting an alarm

– Symptoms:

A red icon  or amber  icon or icon is **missing** for a sensor

– Action:

- Check thresholds setting for the specific sensor is in range of Dell EMC specs
- Ensure that sensor patch cord is connected properly
- Check if sensor is detected by IPI Appliance as temperature type
- Check if sensor name 'Channel' matches with sensor type
- Ensure sensor status is in Enabled state
- Switch the sensor to an empty port, 11 or 12 on IPI Appliance, and check if problem persists
- Sensor may have been damaged/malfunctioning, contact Panduit System Support

Ping works but cannot get into web-interface

– Symptoms:

IPI Appliance can be ping'ed but cannot access web-interface

– Action:

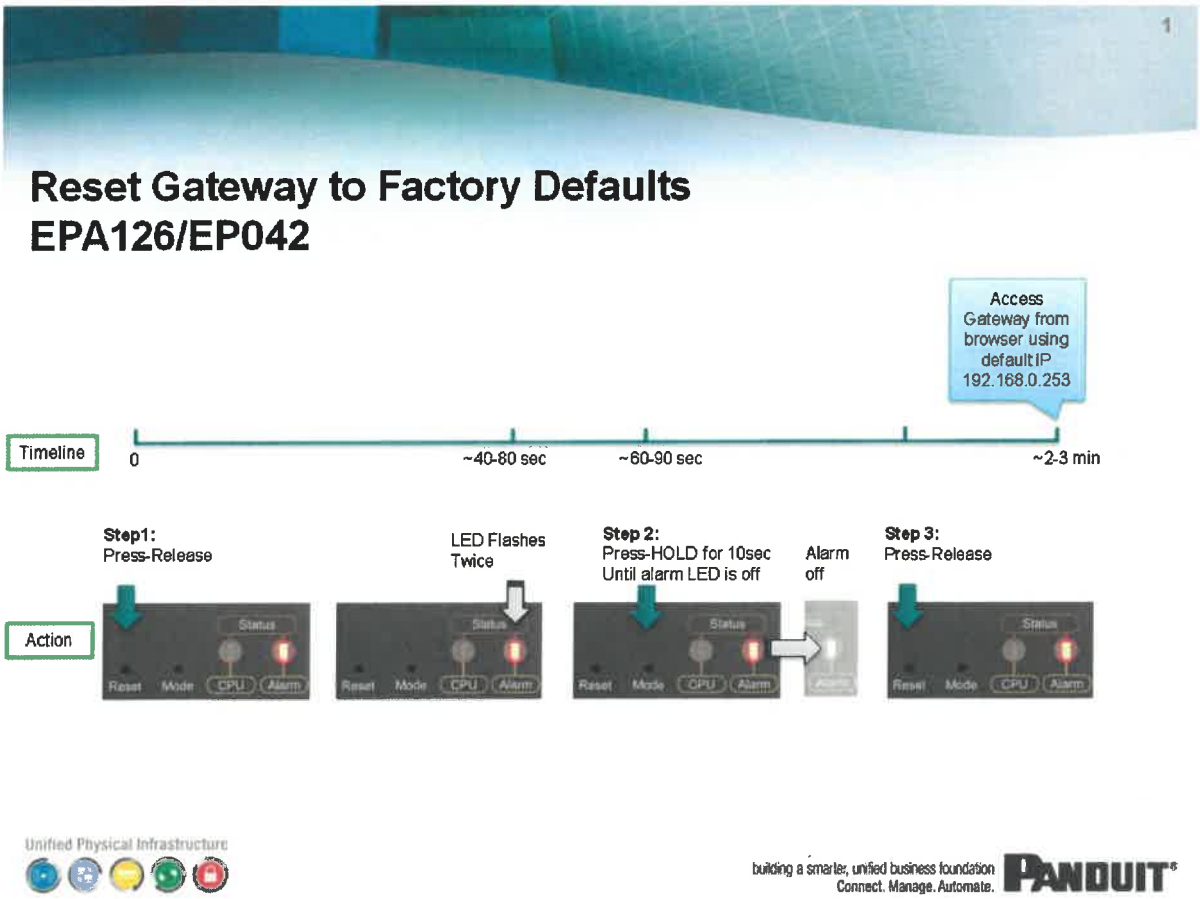
- Usually a transitional state
- Soft reset the IPI Appliance via reset button on the IPI Appliance front or rear
- Wait for 1-1.5min for web interface to initialize
- Check firewall settings on the browser

- If problem persists, contact Panduit System Support as a hard-reset may be required due to a firmware fault

IPI Appliance Reset

– IPI Appliance hard-reset

- If IPI Appliance is not responsive after a soft reset - As a last resort, a factory reset can be performed under supervision of Panduit System Support
- Dell EMC IPI configuration will be overwritten – Vision/Access
- No impact to power outlets – power supply to devices
- Need to Restore Dell EMC spec
- Recommended to be done w/ Panduit System Support



IP Address	192.168.0.253
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Web Management Address	http://192.168.0.253/
Default username	admin
Default password	admin

Cannot ping the IPI Appliance

– Symptoms:

Cannot ping the IPI Appliance or Vision cannot contact/reach IPI Appliance

– Action:

- Check speed and link LED on IPI Appliance front interface are on (speed should be sold and link LED may be blinking)
- Make sure network connection to IPI Appliance is good/stable - IPI Appliance to switch
- Confirm if switch port supports 10/100 speed
- Ensure that your computer has access to network segment of the IPI Appliance IP segment

IPI Appliance displaying an alarm – Red Alarm LED on

– Symptoms:

IPI Appliance show a red alarm LED in front and rear of the IPI Appliance

– Action:

- This is an indication of a sensor showing value exceeding the set threshold limit
- Log into the IPI Appliance and check the Input Sensor screen for 'Value' vs the 'Limits' fields
- Based on the threshold violation, Dell EMC may have a policy in place for recommended action for e.g. what action to recommend to client if temp is

showing more than 95F at *'RD M Temp'* sensor. The recommendation could be to lower the set point of the CRAC/CRAH or adjust air dampeners etc.

IPI Appliance unit has been reset?

– Symptoms:

IPI Appliance seems not working per spec or configuration don't match default

– Action:

- Check the events log to see if all events have been wiped out
- Check the IPI Appliance Dell EMC defaults are set for e.g. System Name value and sensor names etc

Connectivity between IPI Appliance and PDU lost

– Symptoms:

Vision not reporting power readings or power alarms reported on IPI Appliance

– Action:

- Check if the connection between IPI Appliance and PDU via a RJ45 patch cords has been disconnected
- Check if the display panel driven by low-voltage supply from IPI Appliance, is enabled on the PDU
- NOTE: The IPI Appliance disconnection to the PDU does not affect the power supply to PDU outlets. It only affects monitoring and control of power outlets

How to audit IPI Appliance activities and changes

– Symptoms:

A change is made to IPI Appliance or access to VBlock cabinet

– Action:

- Log into the IPI Appliance click on the 'Events' link in the Setup screen
- Review the events and timestamp to determine change or access logs

Power A and/or B Feed on IPI Appliance are disconnected/powered down

- Symptoms:

IPI Appliance lost power or is on single power feed

- Action:
  - IPI Appliance has A & B power feeds and both must be disconnected to lose power on the IPI Appliance
  - If either feed A or B are disconnected, IPI Appliance power should not be disrupted
  - If both feeds are disconnected and reconnected, the result would be similar to a soft reset
  - Data loss will be for the duration of IPI Appliance downtime and no aggregation will take place - all setup configuration will be retained

Power goes down in VBlock, how to get access inside the cabinet

- Symptoms:

VBlock power offline or no power to IPI Appliance – Door lock LEDs are off

- Action:
  - Access control on VBlock is via HID reader cards and power door handles - without power they cannot operate
  - Clients would have to get access to physical key to the front/rear door and access the cabinet
  - Policies for Access control via Door Key (physical key access) would need to be communicated to client

Panduit Technical Support for Dell EMC IPI Appliance

- Severity 1 & 2 Issues call - 24x7:
  - Americas: +1-866-721-5302
  - EMEA: +44-1291-674661

- Severity 3 & 4 Issues email - normal business hours:
  - Global: systemsupport@panduit.com

Information to provide when opening an incident with Panduit Support:

- Client Name/Location
- Dell EMC Incident or Issue Number (if you have one for reference)
- Short Description
- Any steps taken so far to address the issue
- S/w, F/w Version; P/N's if known
- Screenshots/Videos on how to replicate if possible
- Return Contact info

APPENDIX D – PANDUIT IP USER MANUAL

ViON provides documentation of our Panduit IP User Manual in response to Section 4.2.1.1.8 on the following pages.

PANDUIT

DELL EMC

Dell EMC IPI Appliance

User Manual

U-ZAEI-y

Release 1.0
Issue 5

Table of Contents

Introduction

The Intelligent Physical Infrastructure (IPI) Appliance EPA126 is a compact device used to monitor and control up to 6 PDUs and 12 multifunction inputs (temperature, humidity, voltage, and digital inputs).

The unit comprises both an SNMP interface and a secure web-based interface for monitoring and management.
Some of the main features of the unit are:

- Secure web management and configuration interface.
- SNMP enabled.
- 12 monitoring channels.
- Monitoring of up to 6 PDUs.
- Optional LCD Status module.

Remote Temperature and Humidity Sensing

The IPI Appliance EPA126 has the capability to monitor temperature and humidity and raise alarms or take action if a user-configured threshold is crossed.

PDU Monitoring

The IPI Appliance EPA126, via intelligent PDUs, allows around-the-clock monitoring of the electrical power environment of the rack.

Installation Requirements

- IPI Appliance EPA126 unit.
- IEC mains lead (supplied localized).
- Ethernet or Fast Ethernet network connection.
- Network-connected computer system to setup the IPI Appliance EPA126 Unit.

Rack Mounting

This section covers the basic 19-inch rack-mounting of the IPI Appliance EPA126 unit.

Equipment Required

You need to supply a number-1 and a number-2 Phillips screwdriver to rack-mount the IPI Appliance EPA126 unit.

Before You Begin

When determining where to install the IPI Appliance EPA126 unit, please verify that these guidelines are met:

- Airflow around the IPI Appliance EPA126 is unrestricted.
- Clearance to the front and rear panels meet these conditions:
- Front-panel LEDs can be easily read.
- Access to ports is sufficient for unrestricted cabling.
- AC power cord from the power supply can reach the AC power outlet and the IPI Appliance EPA126.
- The 10/100 network cabling does not exceed 100 meters from the IPI Appliance EPA126 to the Network switch.
- Temperature around the IPI Appliance EPA126 does not exceed 40° C.
- Humidity around the IPI Appliance EPA126 does not exceed 90%.

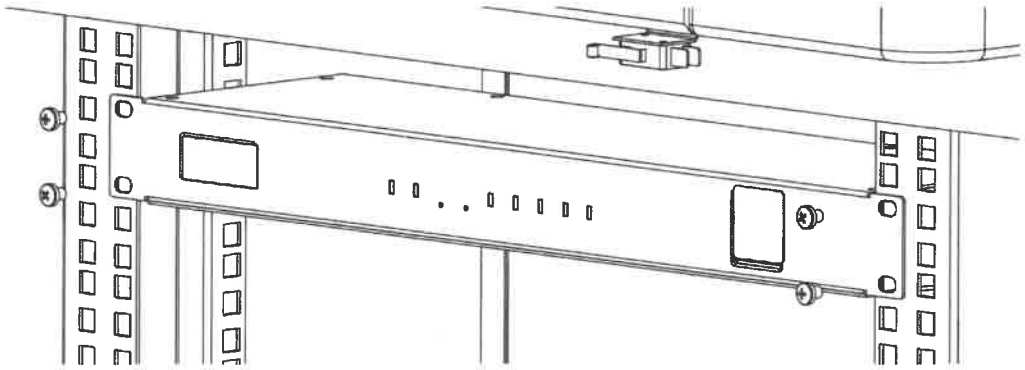
Installation Warning Statements

Note: Only trained and qualified personnel should be allowed to install, replace or service this equipment

- To prevent the unit from overheating, do not operate in an area that exceeds the maximum recommended ambient temperature of 40° C.
- Installation of the unit must comply with local and national electrical codes.
- To prevent personal injury when mounting or servicing the unit, ensure that the rack or cabinet is adequately secured so that the system remains stable.
- Circuit Overloading - Consult the equipment nameplate ratings when connecting the equipment to the supply circuit to avoid overloading of circuits. Overloading circuits can adversely affect current protection and supply wiring.
- Maintain reliable grounding of rack-mounted equipment. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, the use of PDUs).

Rack-Mount the IPI Appliance EPA126

Hold the IPI Appliance EPA126 and attach the bracket to rack using two 12-24 screws.



See the "IPI Appliance Installation Guide" for further instructions.

The IPI Appliance EPA126 Package

The standard IPI Appliance EPA126 package contains supporting hardware, including a localized mains lead.

Front of IPI Appliance EPA126

The following image shows the front panel of the IPI Appliance EPA126 unit:

LEDs

LEDs can be found on the front of the unit. Their purpose is described below.

Network

- **Link** (green): Embedded in RJ45 Ethernet connection. Illuminates when an Ethernet link is established. Flashes with network activity.
- **Speed**(amber): Illuminates when 100mbps connection is used.

Status

- **CPU**: Indicates system activity.
- **Alarm**: Indicates any alarm condition.

Power

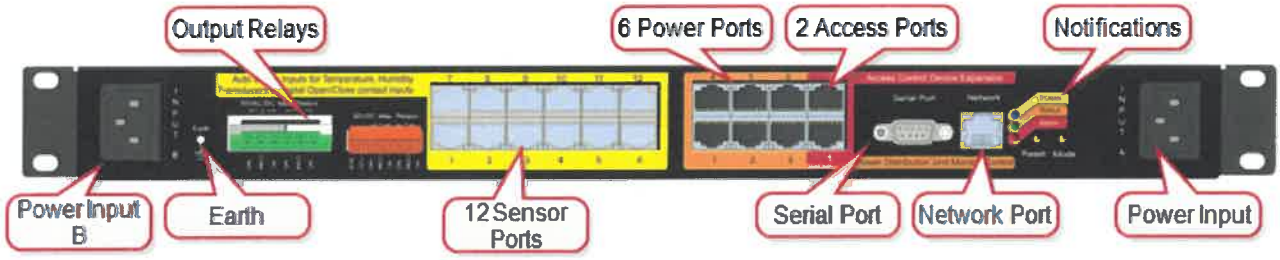
- **On**: Illuminates when unit is powered.
- **Feed B** (amber): Illuminates when mains power is present to input Feed B.
- **Feed A** (amber): Illuminates when mains power is present to input Feed A.

Buttons

There are two buttons on the rear of the unit:

- **Reset**: Allows the user to reboot the unit.
- **Mode**: The mode select switch is used to reset the unit to factory defaults. See the section for details.

Back of IPI Appliance EPA126

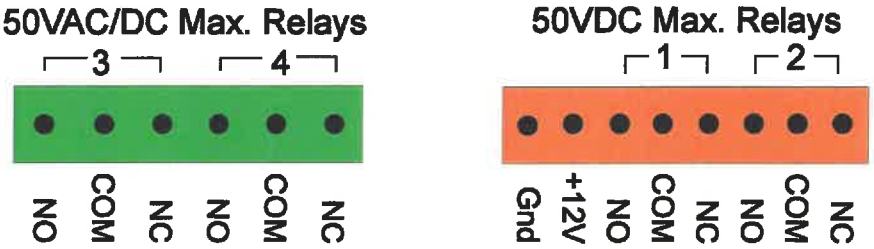


- **Power Input B**: Redundant mains or -48v DC voltage power feed.
- **Earth**: Grounding stud.
- **Output Relays**: Connect up to four output devices (such as Front and Back Electronic Swing Handles, and more).
- **Sensor Ports 1 through 12**: Connect up to 12 sensors (such as Temperature, Humidity, Water, Door Contacts, and more).

- **PDU Ports 1 through 6**: Connect up to six power devices (such as Appliance-Enabled Rack PDUs, Inline Meters, and Clamp Meters).
- **Access Ports**: Connect up to two access and control devices (such as Keypads or HID Card Readers).
- **Serial Port**: Attach optional devices (such as LCD Status Monitor Unit).
- **Network Port**: An RJ-45 port to connect Appliance to LAN/Network.
- **Notifications**: Reset/Mode/Power/Status/Alarm notifications duplicated from the Front Panel.
- **Power Input A**: Mains or -48v DC voltage.

Output Relays

Use the Output Relays to connect up to four output devices (such as Front and Back Electronic Swing Handles, and more).The following diagram shows the output relays of the IPI Appliance EPA126 unit:



Initial Setup

Default Settings

The VCE IPI Appliance in factory default condition has the following network configuration. Advanced users may wish to make use of these settings to access the Appliance unit's Web Management Interface immediately and proceed with configuration.

Users who do not know how to do this should proceed through this section for information on how to configure the Appliance unit.

IP Address	192.168.0.253
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Web Management Address	http://192.168.0.253/
Default username	admin
Default password	admin

Note: Password entries are case-sensitive.

Connecting to the Web Management Interface

The VCE IPI Appliance monitoring solution can be configured entirely using the built-in Web Management Interface.

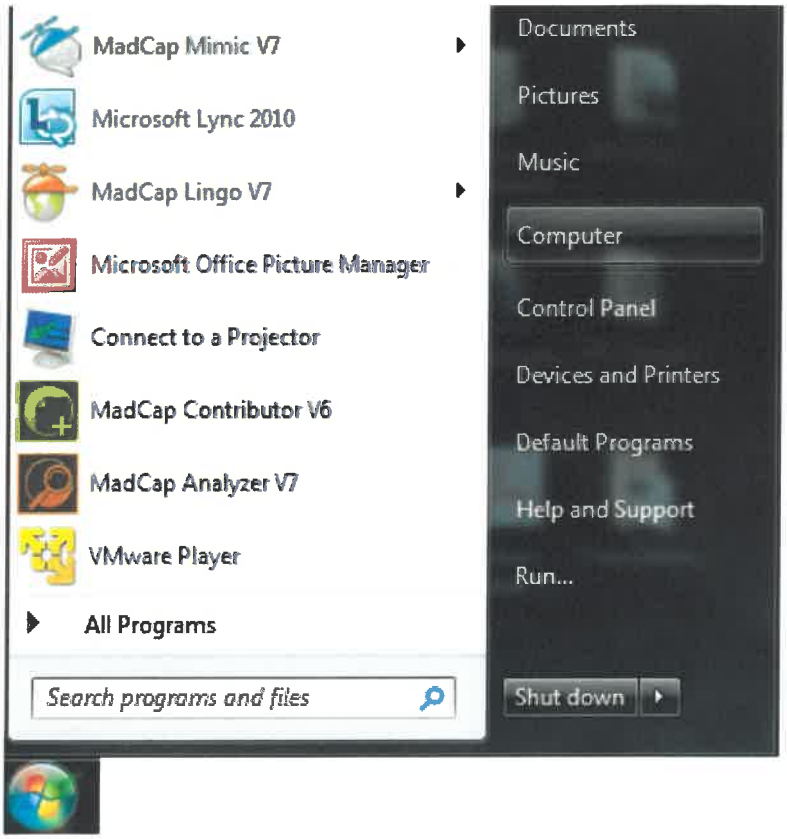
You may need to change the IP address of the PC to connect to the Web Management Interface for the first time. The following section details how to change the IP address and connect to the Web Management Interface.

Changing your PC's IP Address

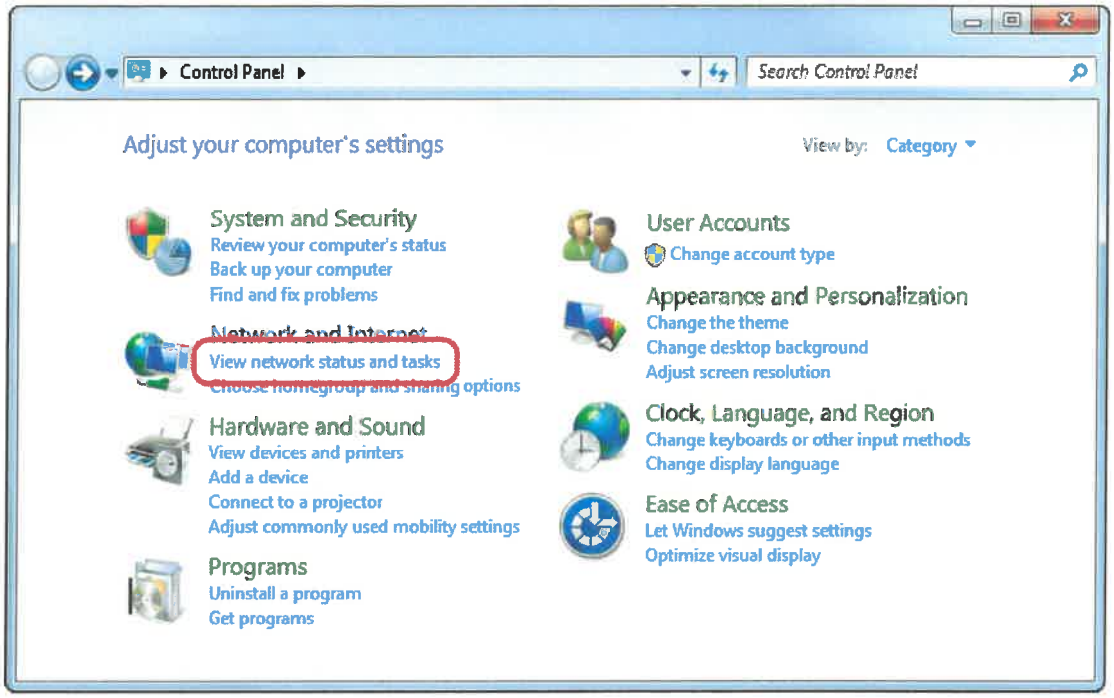
Note: Instructions refer specifically to Windows 7. Please refer to your operating system documentation if you are not using Windows 7.

1. Click the Windows button and select **Control Panel**.

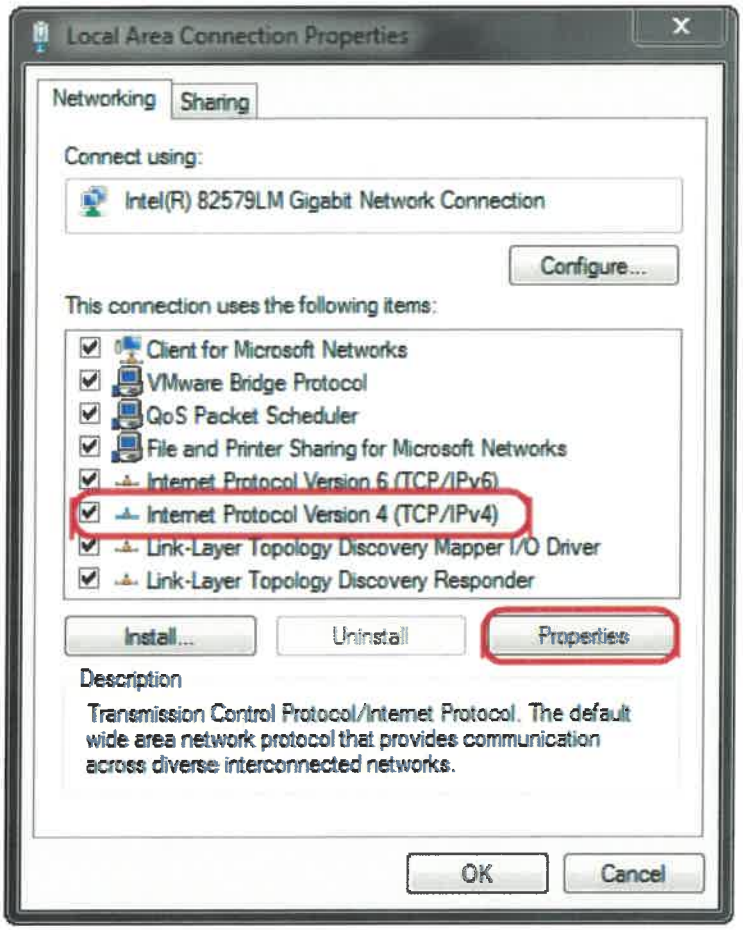
2. In the Control Panel window, select **View network status and tasks** under the Network and Internet heading.



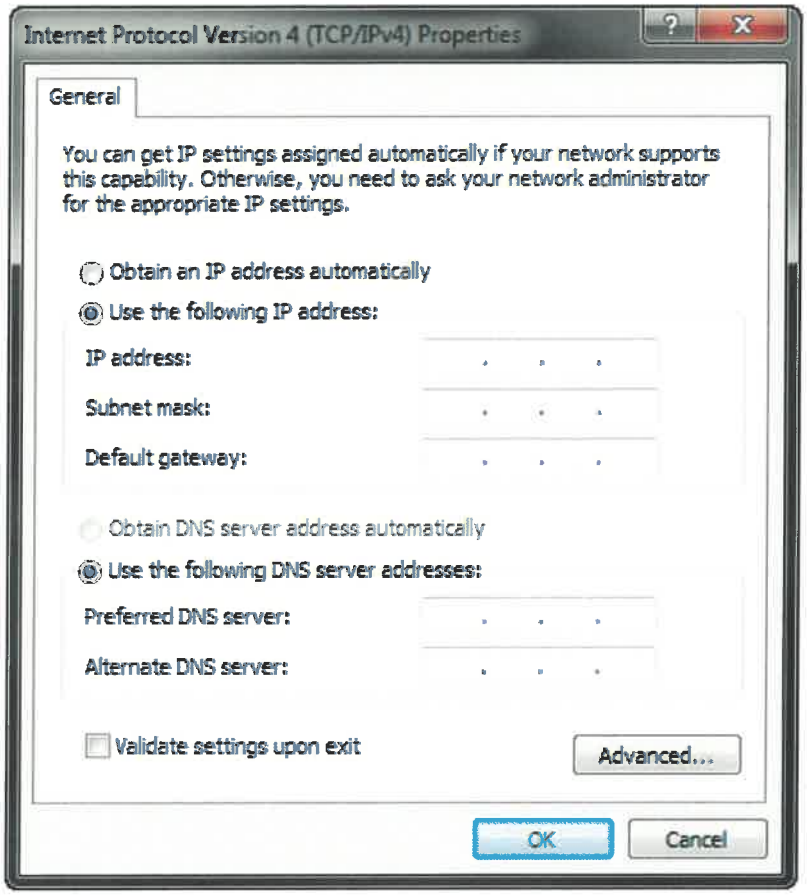
3. Select **Change adapter settings** from the menu on the left.



4. Select **Local Area Connection.**
5. Select **Internet Protocol (TCP/IP) Version 4** (you may need to scroll down). Then click the **Properties** button.



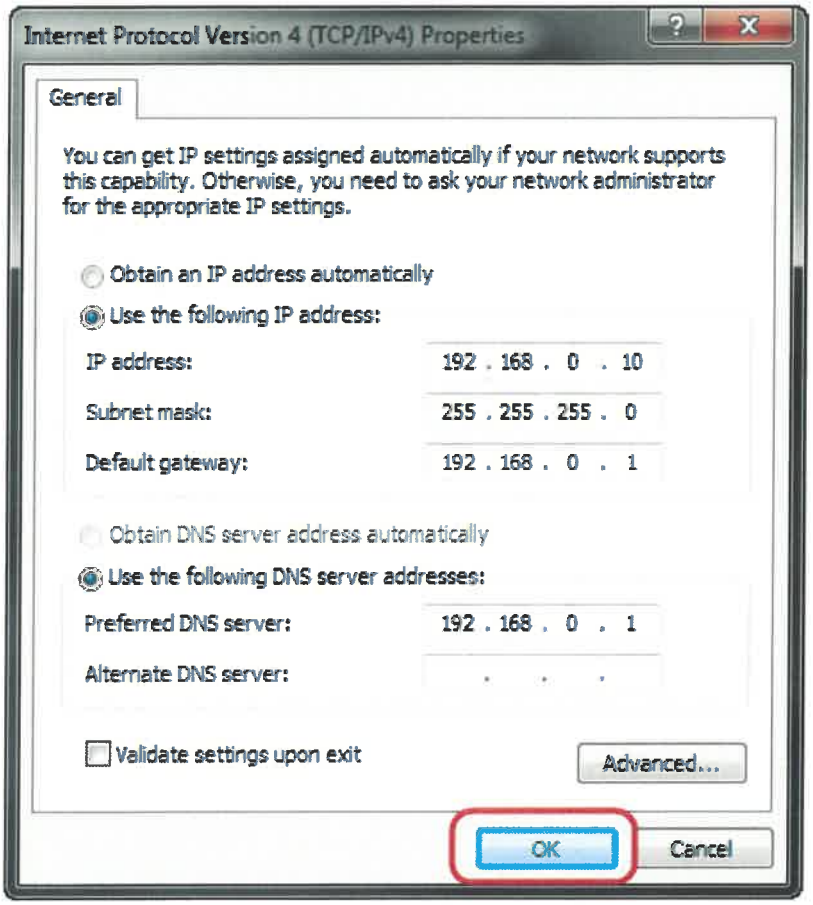
6. Select the **Use the following IP address** radio button.The **Use the following DNS server addresses** radio button then selects automatically.



Enter the following details into the appropriate boxes.

- **IP address:** 192.168.0.10
- **Subnet mask:** 255.255.255.0
- **Default Gateway:** 192.168.0.1
- **Preferred DNS server:** 192.168.0.1

7. Click **OK** to accept the entries.



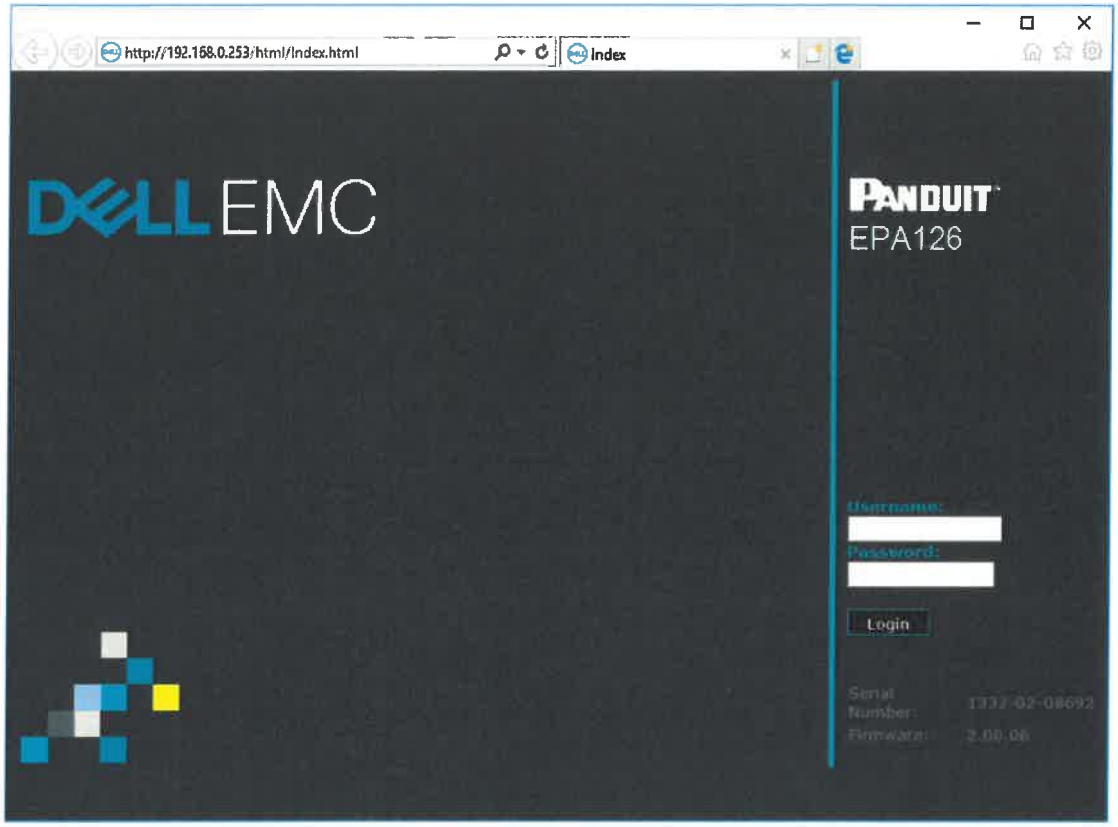
8. On the Local Area Connection Properties, click **OK** to return to the desktop.

Connecting to the IPI Appliance EPA126 Web Management Interface

1. Connect the IPI Appliance EPA126's network connection directly to a PC's Ethernet network card using a patch cable.

Note: A crossover cable must be used when directly connecting the unit to a PC's network card.

2. Power the unit.
3. Open a web browser.
4. Enter the following in the address field: `http://192.168.0.253`.
5. The Web Management Interface loads.



6. Click login and enter the username and password. The unit defaults are:

- **Login**: `admin`
- **Password**: `admin`

Note: Password entries are case sensitive.

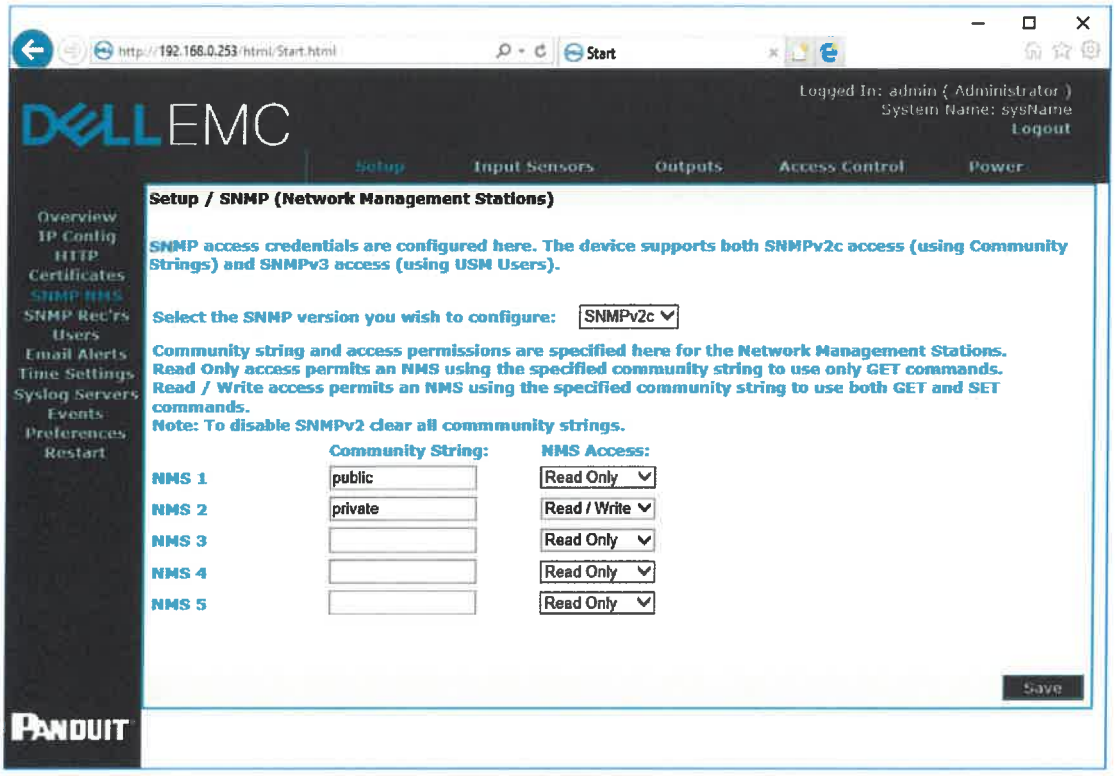
Initial Network Setup

This section provides details on preparing the unit for network access and allowing Simple Network Management Protocol (SNMP) network management.

Connection to the Web Management Interface is required.

Entering NMS Details

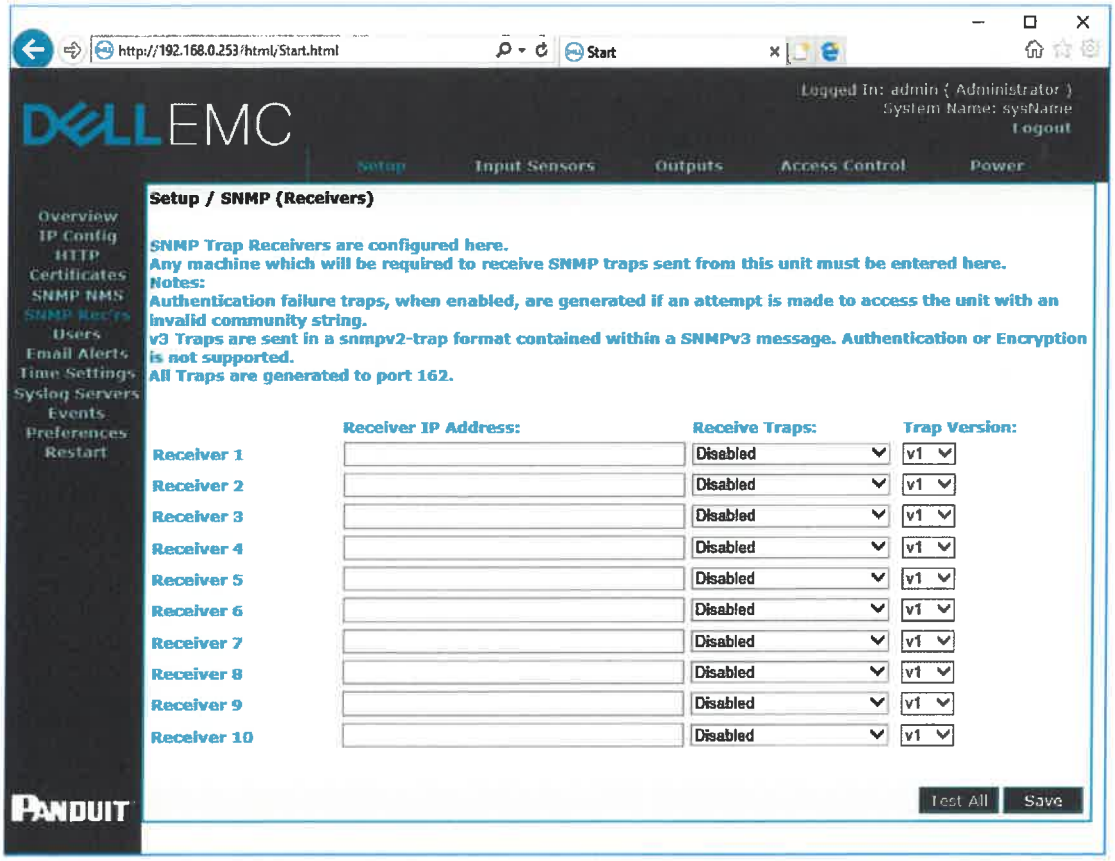
1. Click the **Setup** tab on the top menu bar, and then select the **SNMP NMS** link on the left menu bar.



2. Enter the IP address, chosen community string, and required Network Management Station (NMS) access permissions of the NMSs to be used.
3. Click **Save** to confirm the changes.
4. To disable an NMS, select the **Disabled** option from the **NMS Access** drop-down list.

Entering Trap Receiver Details

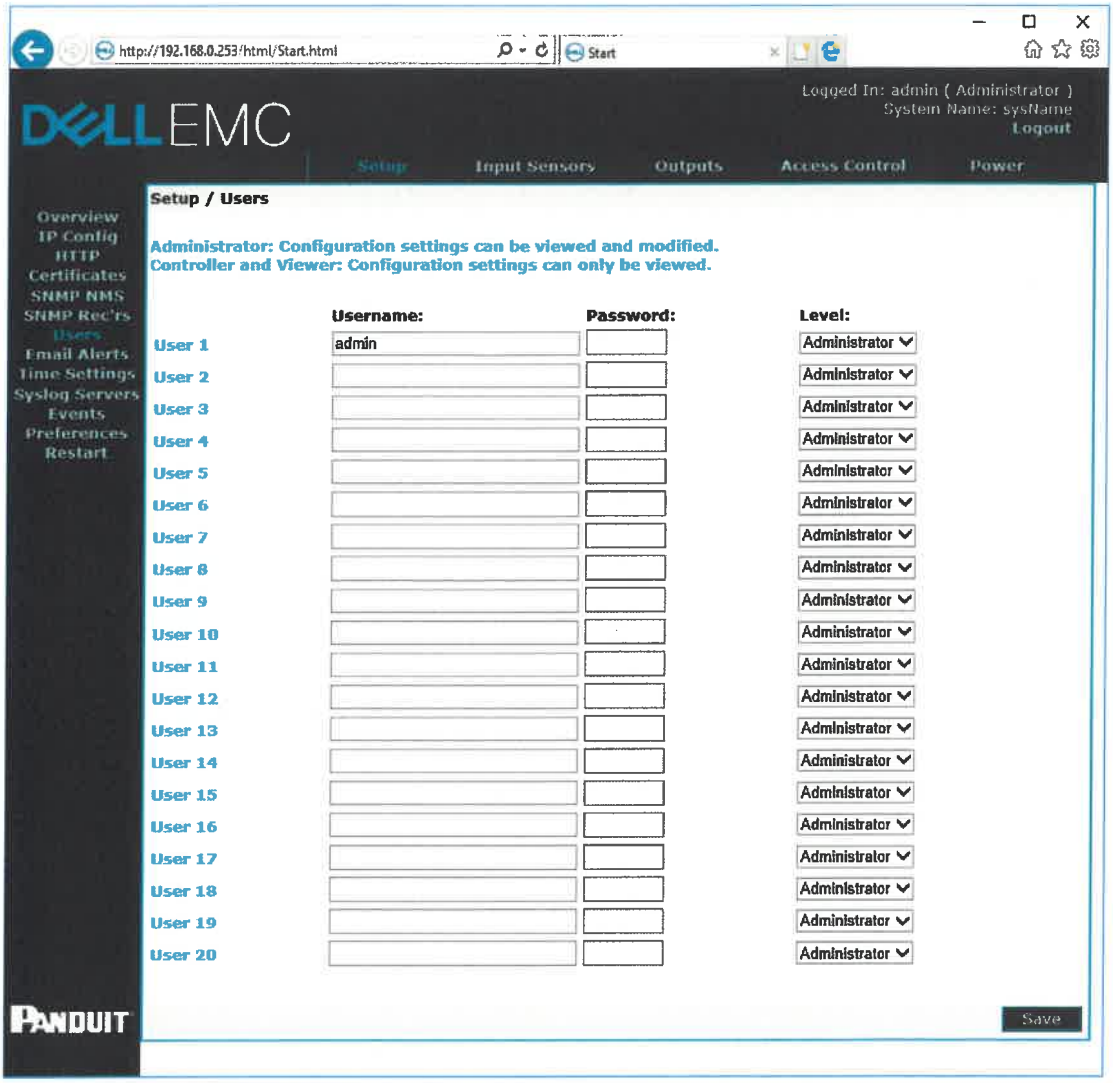
1. Click the **Setup** tab on the top menu bar.
2. Select the **SNMP Rec'rs** link on the left menu bar.



3. Enter the IP address.
4. Enter the chosen community string
5. Choose whether to enable traps, disable traps, or enable traps including authorization failures (meaning the unit will issue traps if an unauthorized IP address attempts to access the unit's SNMP functions) for each receiver.
6. Click **Save** to confirm the changes.

Adding Users

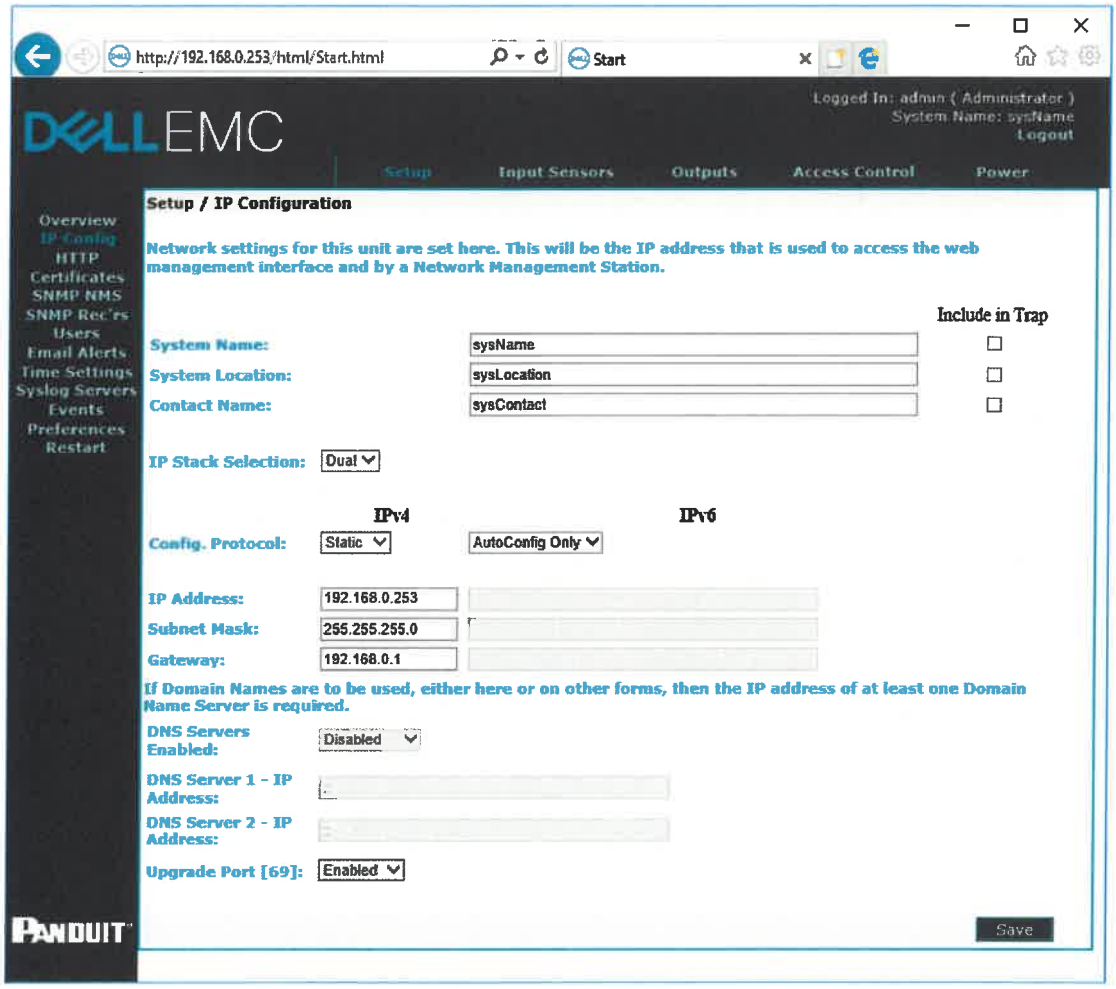
1. Click the **Setup** tab on the top menu bar.
2. Select the **Users** link on the left menu bar.



3. You can set usernames, passwords, and access levels here. Unique usernames can be set for individuals who require web management access to the Appliance unit.
4. Click **Save** to confirm the changes.

Changing the Unit IP Address

1. Click the **Setup** tab on the top menu bar.
2. Select the **IP Config** link on the left menu bar.



3. Enter the **IP Address**, **Subnet Mask**, and the **Appliance** address that the IPI Appliance unit will use (required). Contact your network administrator if you do not know the values that you must enter here.
4. Select the **Config. Protocol** (Static, DHCP, or BootP).
5. Enter the SNMP **System Name, System Location** , and **Contact Name** if required. These fields will be added to all SNMP traps generated by the unit.
6. Click **Save** to confirm the changes.
7. Click **Restart** ,and then select **Restart Now** to reboot the unit and implement the changes.

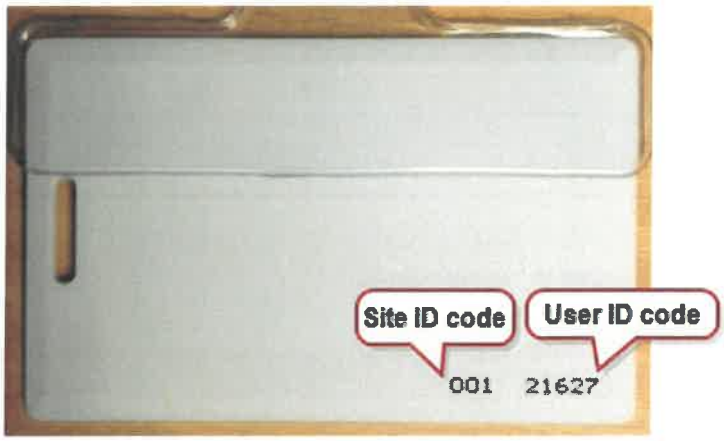
Note: Once the IP configuration has changed, the unit will no longer be accessible via the default IP address, because the new address will be operational.

The unit should now be connected to the main network and any further required configuration will be done via the unit's new IP address.

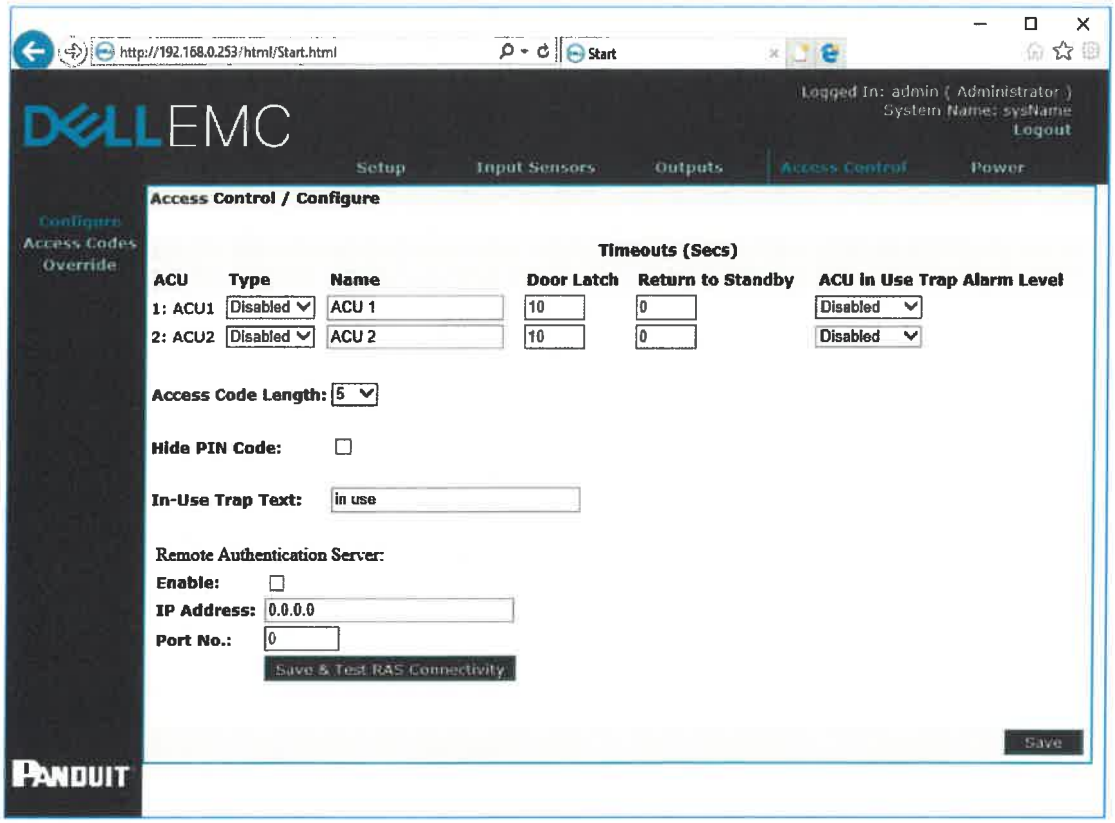
HID Reader

The IPI Appliance EPA126 include Smart Card readers that support HID 26 bit cards and HID Corporate 1000 cards.

HID 26 Bit Cards



For 26 Bit cards, the IPI Appliance EPA126 interface must be programmed for nine digits.



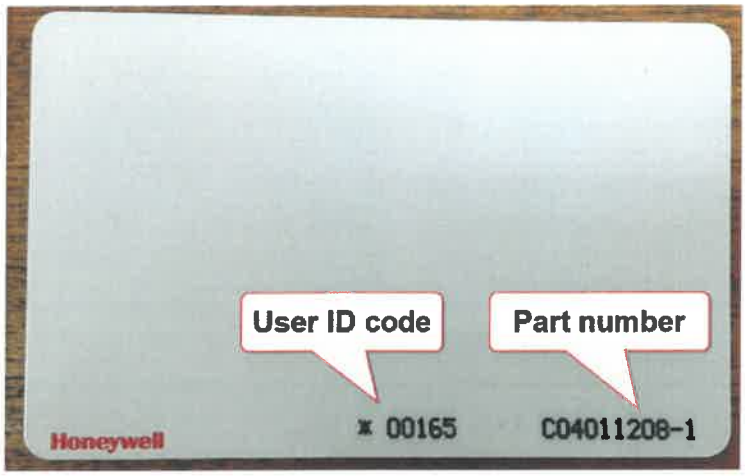
These nine digits consist of the following:

- 3-digit site code
- 1 hyphen
- 5-digit User ID code

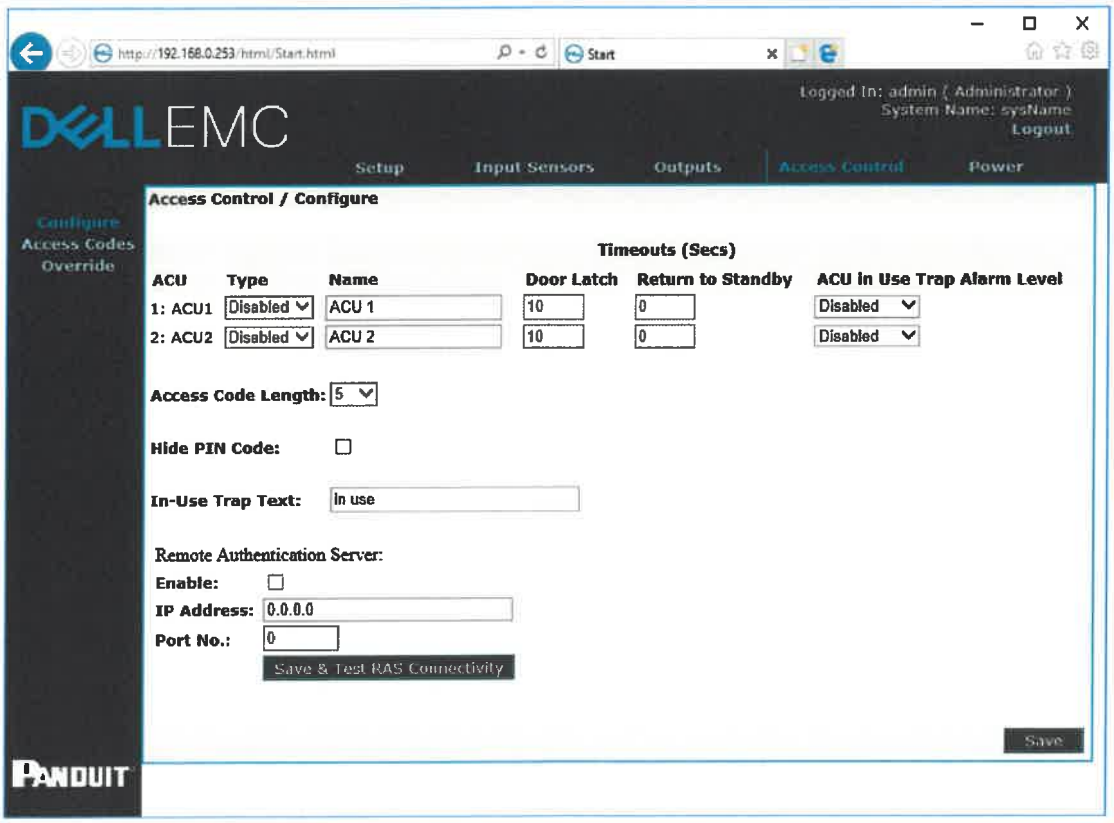
Example: 001-21627

Note: The hyphen character must be input (it is included in the length).

HID Corporate 1000 Cards



Corporate Site IDs are not normally printed on HID Corporate 1000 cards. This is confidential to each organization. You will need to ask the security office of the organization or supply company for the Site ID code, which is a four-digit number.
For 34 Bit Corporate 1000 cards, the Appliance interface must be programmed for 12 digits.



These 12 digits consist of the following:

- 4-digit site code
- 1 hyphen
- 7-digit User ID code

Example: 001-21627

Note: The hyphen character must be input (it is included in the length).

If the user ID code does not have seven digits, then the ID number must be padded out with leading zeros. Thus an ID code of "00165" becomes: "0000165".

Example for a card with a 2033 Site ID: 2033-0000165

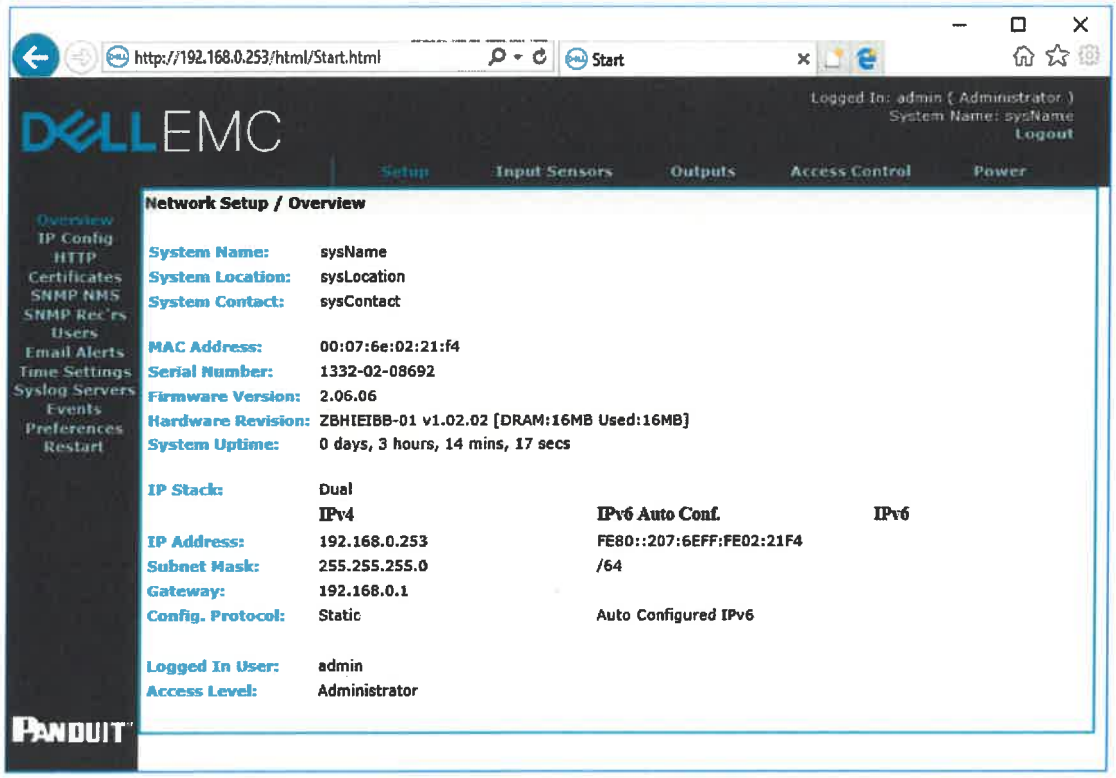
Web Management Interface

The IPI Appliance EPA126 has a built-in Web Management Interface that can be accessed securely. The interface permits complete configuration and monitoring of the unit.

Windows where changes can be made have a **Save** button in the lower right-hand area. Click **Save** to activate and save any changes made.

Network Setup - Overview

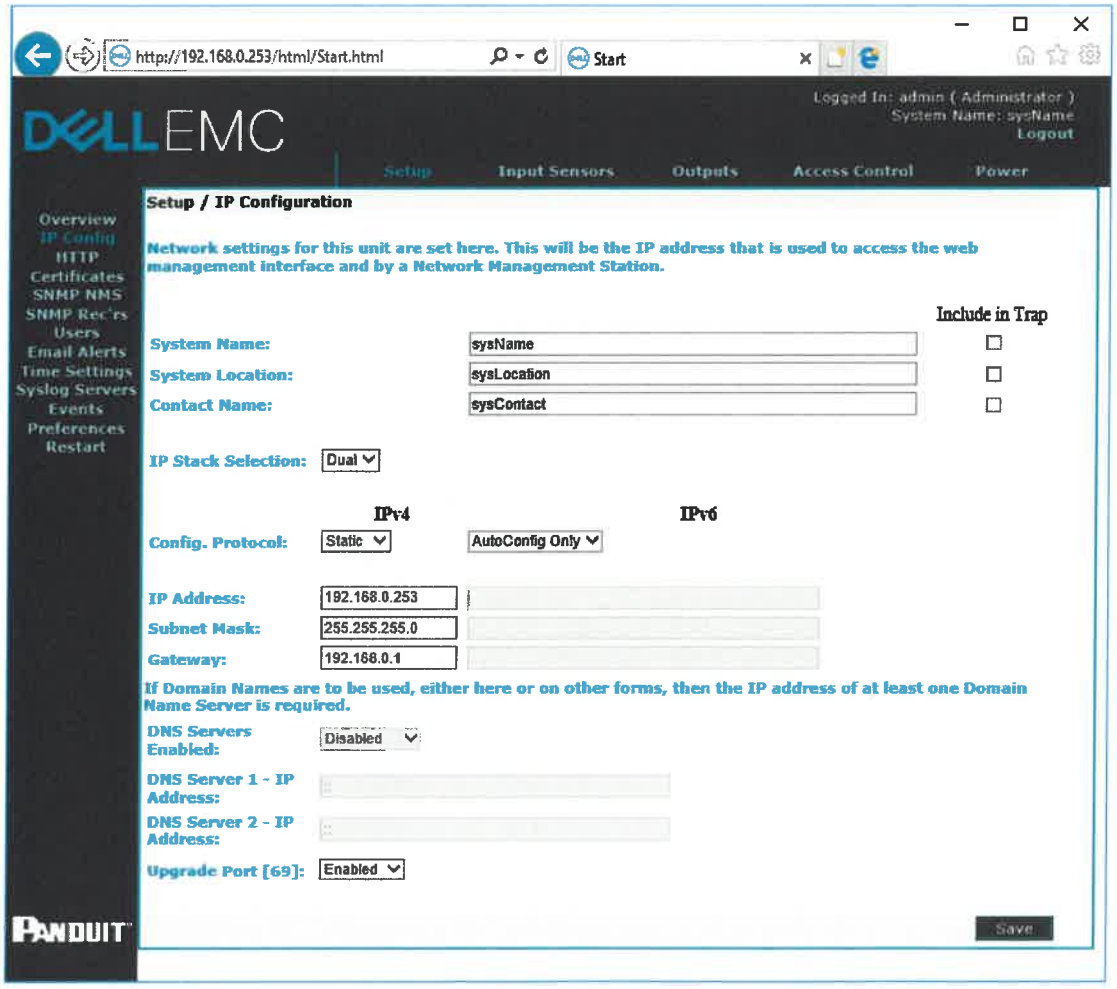
The Overview page is the first page displayed and provides the user with an overview of the unit's current status.



System name, MAC address, serial number, firmware version, and other system details can be found here.

Setup - IP Configuration

The IP Config page allows you to set the IPI Appliance unit's own management IP address.



System Name

You can specify the system name here. This is normally the Fully Qualified Domain Name (FQDN) of the device, but this is not enforced.

You can retrieve the value specified here by querying the sysName node via SNMP. This allows SNMP management platforms to obtain unique names for units where specified. This value has no effect on network communications, and the unit will function correctly with or without a value.

System Location

You can specify the system location here.

You can retrieve the value specified here by querying the 'sysLocation' node via SNMP. This allows SNMP management platforms to obtain location names for units where specified. This value has no effect on network communications, and the unit will function correctly with or without a value.

Contact Name

You can retrieve the unit support contact name by querying the 'sysContact' node via SNMP. This value has no effect on network communications and the unit will function correctly with or without a value.

IP Address

You can enter a standard IP address here. The address is entered in decimal format (for example: 192.168.0.44 or 22.10.45.33).The address entered here will be the address by which the Appliance unit is accessed and managed.

Subnet Mask

The subnet mask is used to determine what part of the IP address is the network portion and what part is the host portion.
It is often 255.255.0.0 or 255.255.255.0. The correct setting is essential for correct operation.

The subnet mask is entered in decimal format (for example: 255.255.255.0 or 255.255.224.0).

Appliance

The Appliance setting specifies the IP address of the machine/router that the Appliance unit uses to communicate with different networks.

The Appliance address is entered in decimal format (for example: 192.168.0.1 or 11.2.24.103).

Most networks will have a Appliance. Correct setting is important for correct network communications.

Config. Protocol

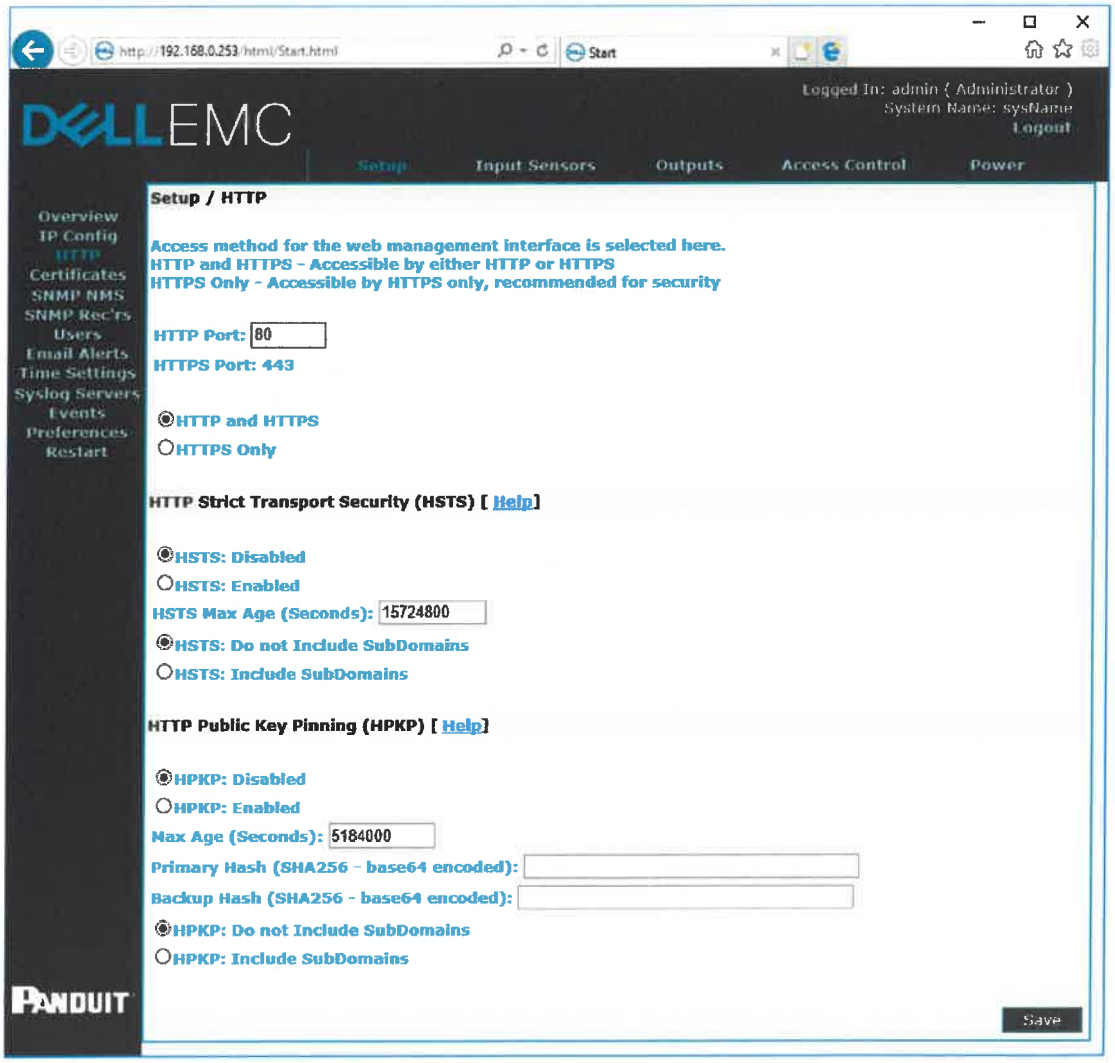
Select the configuration protocol. Choices include:

- Static
- DHCP
- BootP

Note: Once you enter the IP Configuration options and click **Save**, the changes take effect. If incorrect entries are made, this may result in loss of communication. If this happens, reset the unit's network configuration. Details of how to do this can be found in the Troubleshooting section.

Setup - HTTP

Select the access method for the Web Management Interface here. Both HTTP and HTTPS access modes are available by default. Selecting the HTTPS radio button will allow only HTTPS configuration.



Use of HTTPS is recommended for security, because the connections will be encrypted.

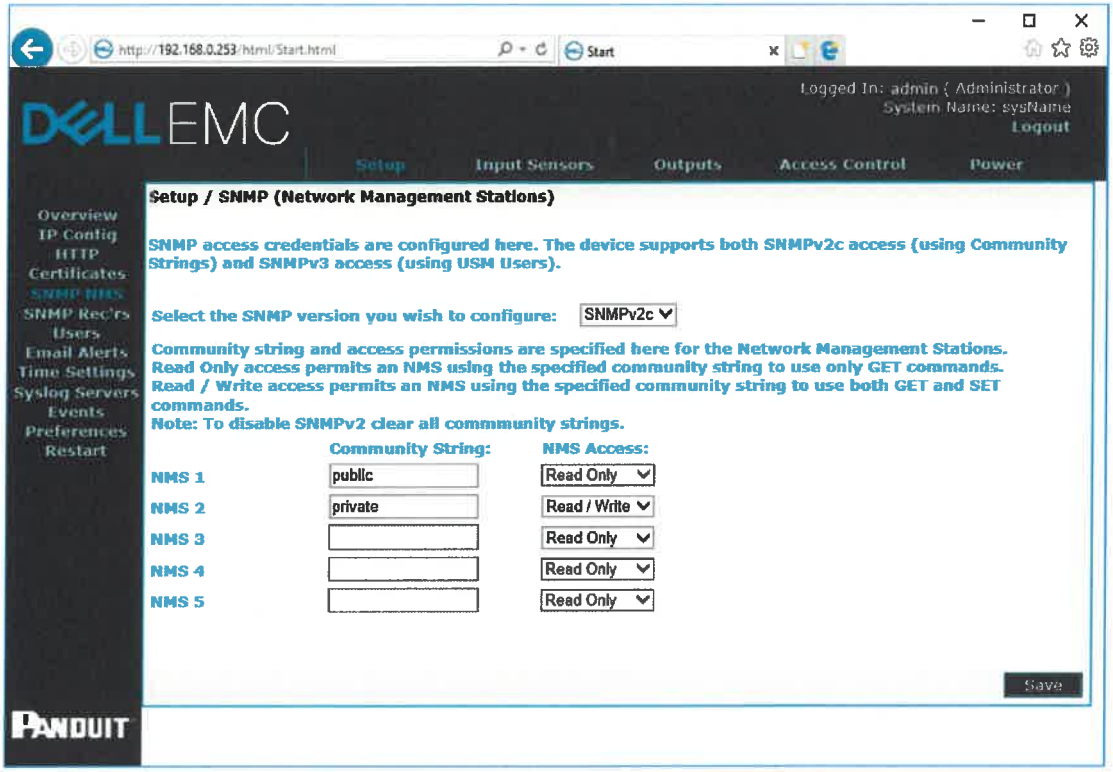
Additionally, you can specify the TCP port for connection to the Web Management Interface here. If you have specific requirements for default ports, these can be left at their default settings (for example, port 80 for HTTP and port 443 for HTTPS).

Note: Changing the selection to HTTP or HTTPS requires a reboot for the selection to take effect.

Setup - SNMP NMS

Specify the IP address, community string, and access permissions for up to five Network Management Stations here.

Any machine that needs to access the unit's SNMP functions must be entered here.



NMS IP Address

Enter the IP address of the NMS machine here.

Community String

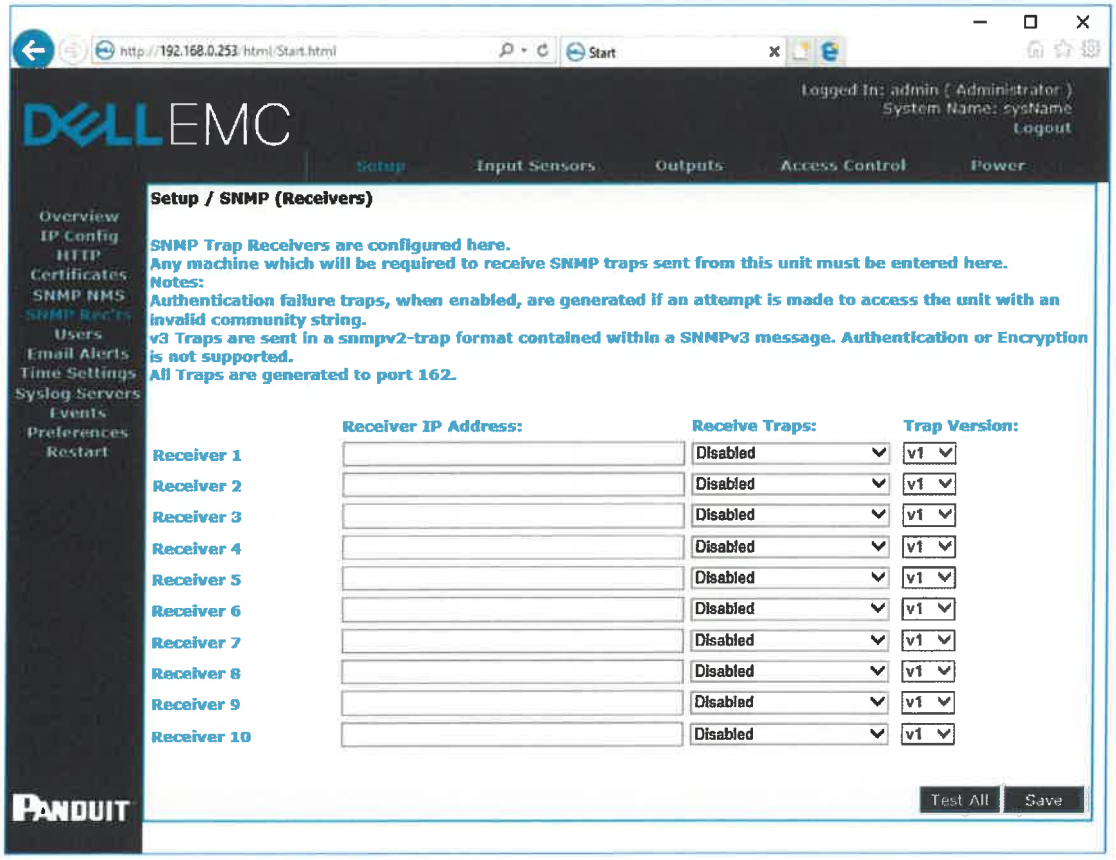
Enter the required community string here. The default for many devices is **public**. It is recommended that the community string be changed, because it serves as an access password.

NMS Access

Read-only access permits the NMS to use only GET commands. Read/Write access permits the NMS to use both GET and SET commands.

Setup - SNMP Receivers

Specify the IP address, community string, and access permissions for up to 10 Network Management Stations here.



Receiver IP Address

You must enter any machine that is required to receive SNMP traps sent from this unit. Usually any SNMP NMS entries should also be entered.

Community String

The required community string must be entered here. The default for many devices is **public**. The community string should be changed, because it serves as an access password.

Receive Traps

The Receive Traps **Enabled** setting allows the specified NMS to receive the unit's standard range of traps. Receive Traps **Enabled (incl Auth fails)** will cause the unit to issue traps if an unauthorized IP address attempts to access the unit's SNMP functions.

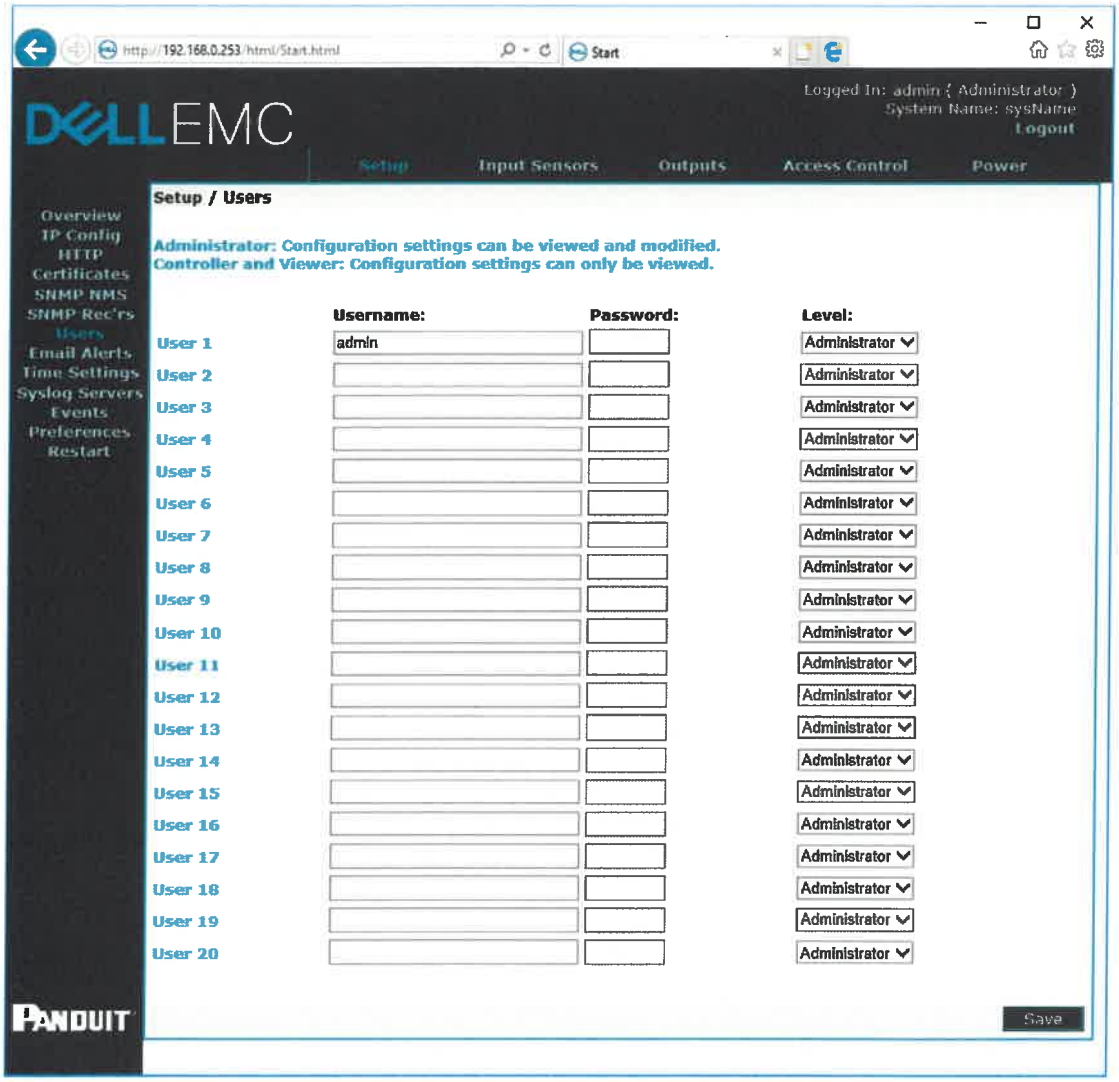
Receive Traps **Disabled** prevents traps from being sent to the specified NMS IP address.

Setup - Modbus

To enable a Modbus communications protocol, specify the Modbus port number, and enable relays control.

Setup - Users

You can add users with permission to access the Web Management Interface here. Access passwords are also specified along with users' access permissions.



Username

Enter the required username. This is the username that will be required to login to the Web Management Interface.

Password

Enter access passwords on a per-user basis.

Level

Three user levels are available for assignment.

- **Administrator** : Administrators have full control of IPI Appliance configuration settings.
- **Controller** : Controllers can view configuration settings.
- **Viewer** : Viewers can view configuration settings.

Warning: User 1 / admin is the master administrator. It is possible to remove administrator rights from the admin user. Doing this is not recommended as it may result in no one having administrator access. In this situation, a reset to factory defaults is the only solution. Details on how to do this can be found in the Troubleshooting section.

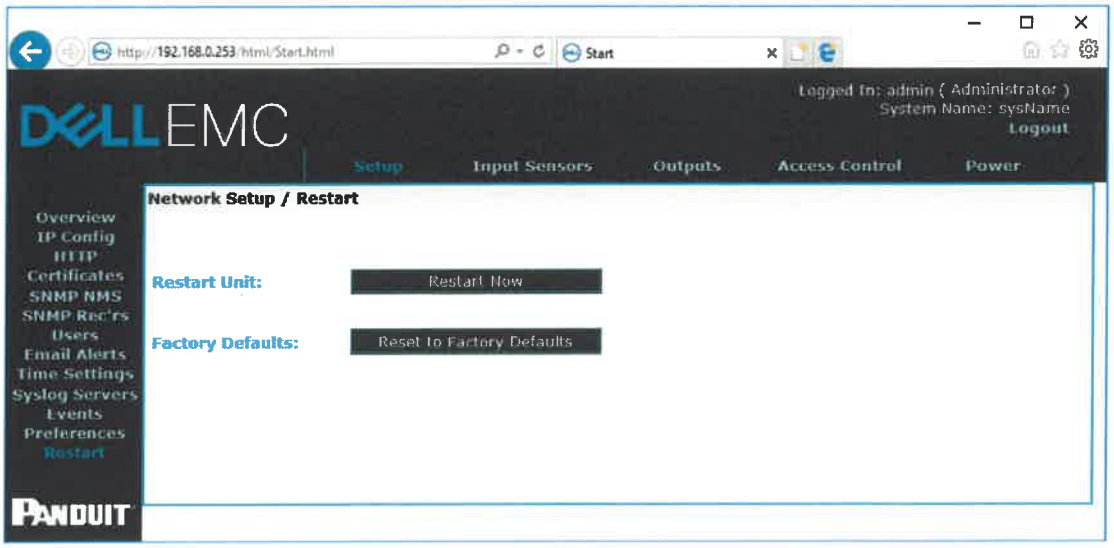
Setup – Restart

A unit may be rebooted or reset to factory defaults here.

Restart Unit

Restart Now

Selecting **Restart Now** commands the unit to reboot. Rebooting the unit will cause any outstanding configuration changes to take effect.

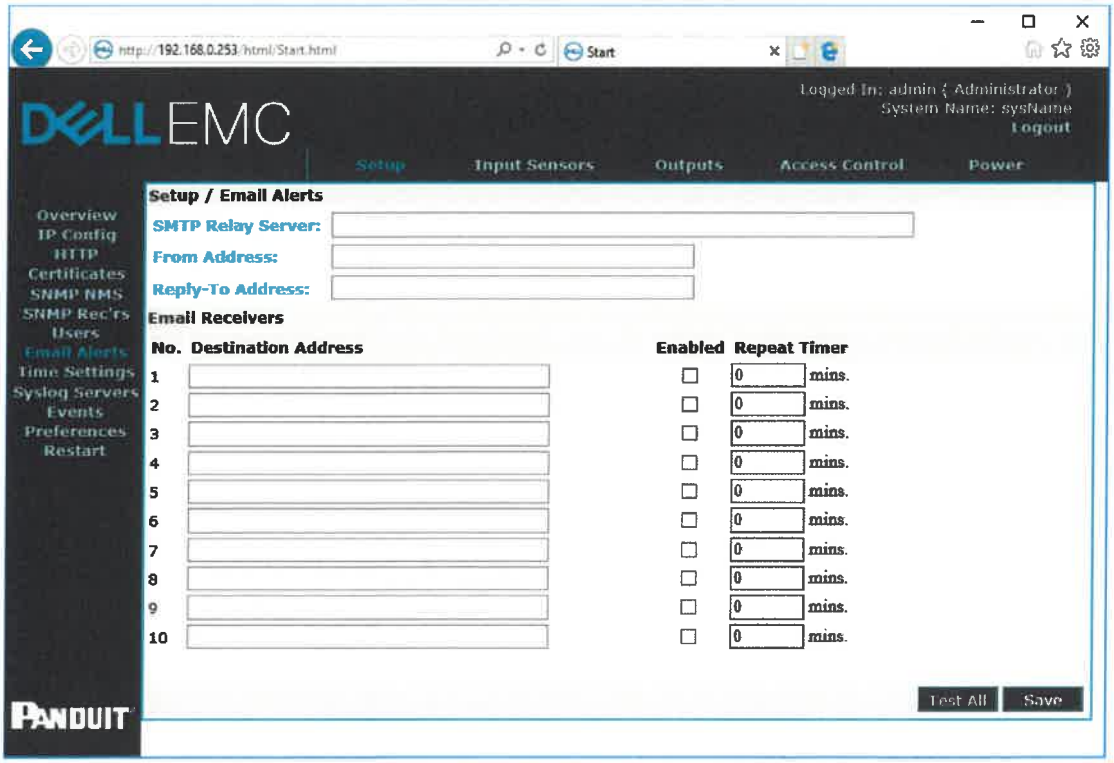


Reset to Factory Defaults

See Troubleshooting for instructions on resetting the factory default settings for the unit.

Setup - Email Alerts

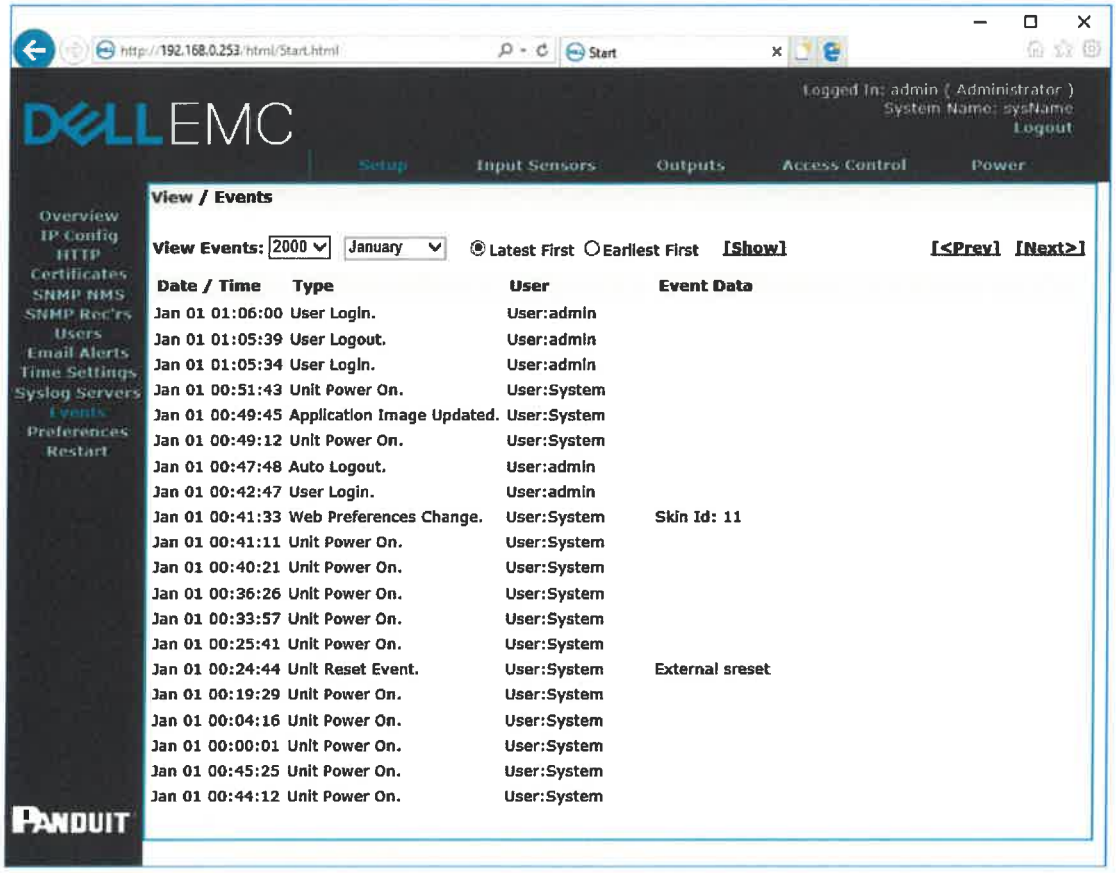
On this page, you can edit email alert settings for traps. You may set up to 10 email receivers.



Email Alerts	
SMTP Relay Server	The IP Address of the SMTP Server
From Address	Address from which the alert emails are sent
Reply-To Address	Address to which the email receivers can reply
Destination Address	Address that will receive the email alerts
Enabled	Toggle the check box to enable or disable alerts to each address
Repeat Timer	Number of minutes after which the email alert will repeat

Setup - Events

The **Events** page shows a history of events that have occurred, along with specific details about each event.



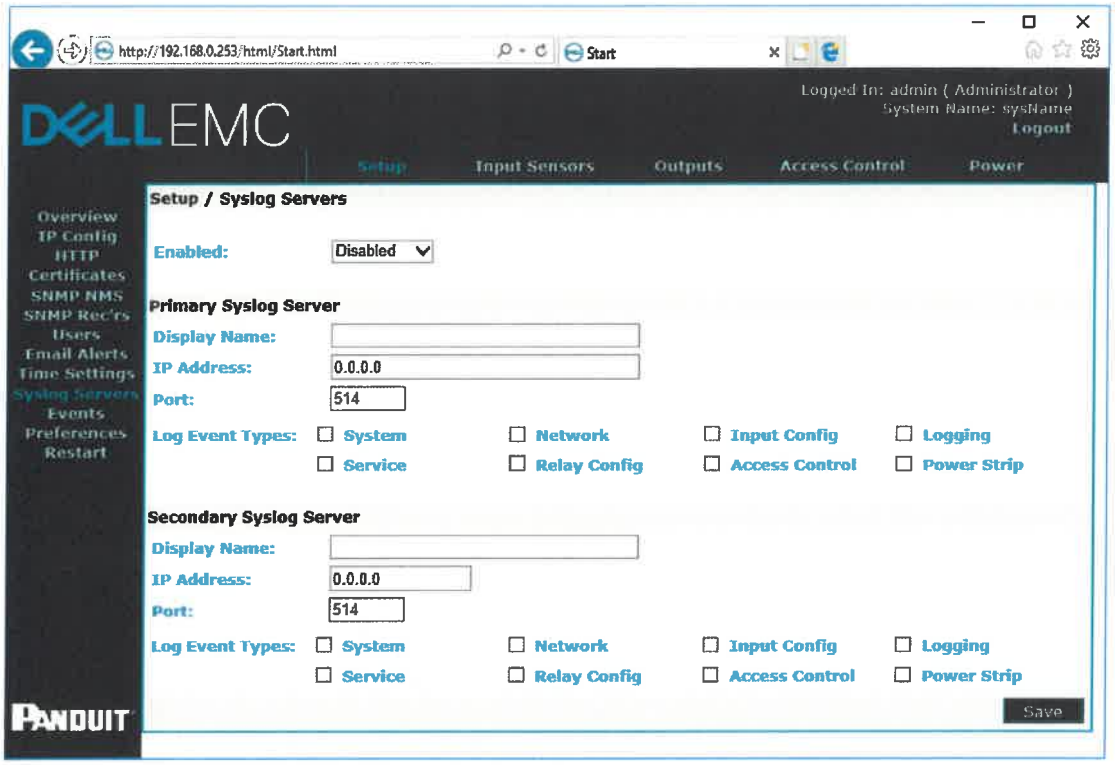
To specify a range of events to view, select the desired year and month from the drop-down menus, then click **Show**.

Date/Time, Type, User, and Event Data for each event are displayed.

Events can be ordered **Latest First** or **Earliest First** by clicking the corresponding radio button.

Setup - Syslog Servers

This page allows you to view or edit information about the Syslog Servers currently being used.

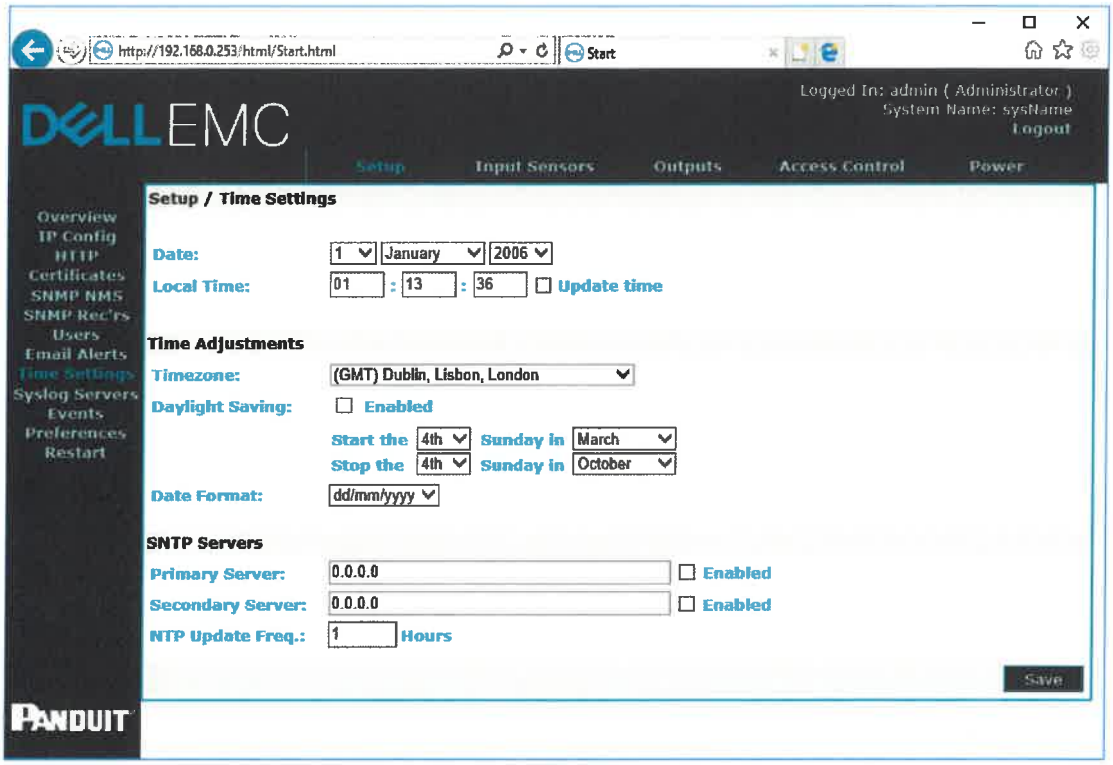


From the Enabled drop-down menu, you can choose which syslog servers are enabled. Fill in the following fields for each Syslog server.

Syslog Server Setup	
Display Name	The name of the Syslog server
IP Address	The IP address of the Syslog server
Port	The number of the port being used
Log Event Types	Click the check boxes to choose which events to log

Setup - Time Settings

The **Time Settings** page allows you to view or edit the current date and time.



Select the correct day, month, and year from the drop-down menus, and verify the local time. If you want to change the time, you must check the Update time check box.

Time Adjustments

Select the correct time zone from the drop-down menu.

- **Daylight Saving** can be enabled or disabled by clicking the check box. If Daylight Saving is enabled, select start/stop dates from the subsequent drop-down menus.
- **Date Format** allows the administrator to choose whether the date is displayed with the day or month first. For example, the date August 20, 2013 can be displayed in one of two ways:

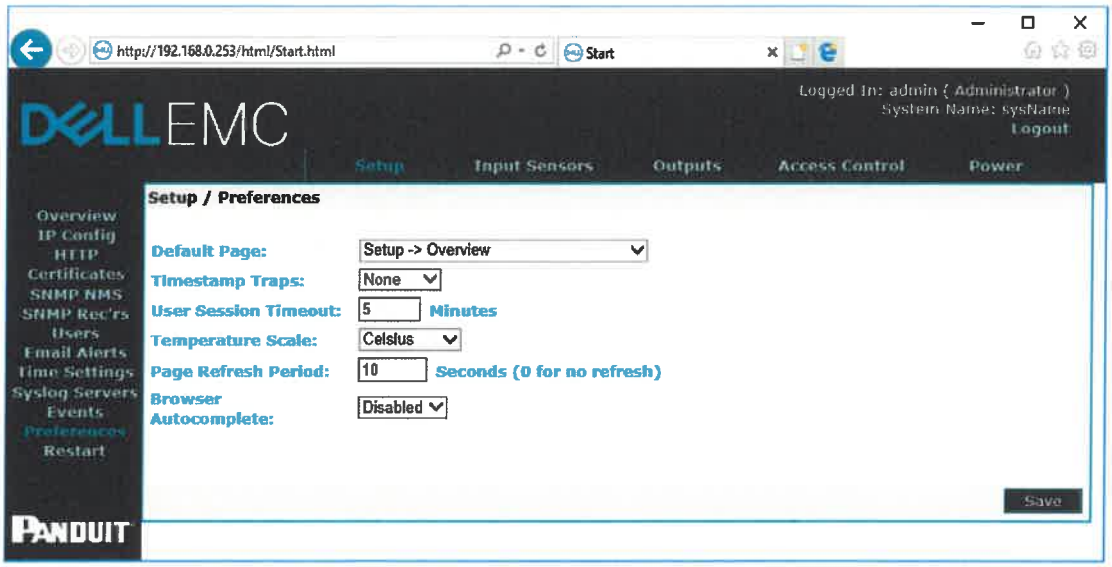
  20/08/2013 (DD / MM / YYYY)
  or
  08/20/2013 (MM / DD / YYYY)

Select the desired format from the dropdown menu.

- **SNTP Servers - Simple Network Time Protocol** synchronizes the clocks of computer systems over a network. Enter the IP address of an SNTP server, and specify (in hours) how often the time should be updated.

Setup - Preferences

The Preferences page allows you to edit system preferences.

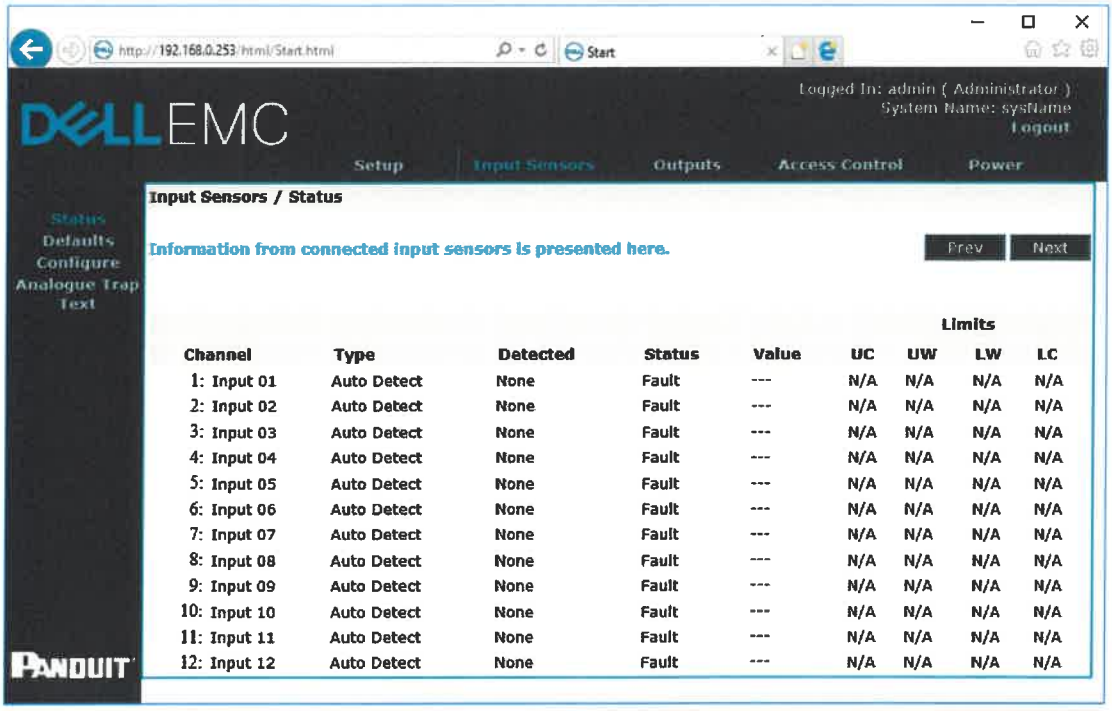


Preferences	
Default Page	From the dropdown menu, select the first page you want to open when a user logs in. The preset default page is the Overview page.
Time stamp Traps	Choose from the drop-down menu where the timestamp will be found on traps. There are three options: • Prefix – timestamp at the beginning • Append – timestamp at the end • None – no timestamp
User Session Timeout	Enter a number of minutes, after which a session will be timed out if the user is inactive.
Temperature Scale	Select Celsius, Fahrenheit, or Kelvin from the drop-down menu.
Page Refresh Period	Enter a number of seconds, after which the page will automatically refresh. If 0 is entered, the page will not refresh automatically.

Input Sensors – Configuration and Status

Status

The Input Sensors status page presents an overview of the input ports. This page displays the input channel number, name, type of input sensor, status, current readings, and thresholds.



Channel	Type	Detected	Status	Value	Limits UC	UW	LW	LC
1: Input 01	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
2: Input 02	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
3: Input 03	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
4: Input 04	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
5: Input 05	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
6: Input 06	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
7: Input 07	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
8: Input 08	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
9: Input 09	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
10: Input 10	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
11: Input 11	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A
12: Input 12	Auto Detect	None	Fault	---	N/A	N/A	N/A	N/A

Status Indicators

Three status indicators are displayed next to input channels to allow quick determination of normal, warning, and critical alarm statuses:

✓	Channel reading currently within threshold limits.
⚠	Upper or lower Warning limit reached or exceeded.
⊗	Upper or lower Critical limit reached or exceeded.

Input Sensors – Defaults

This page allows you to choose default settings for **Temperature Sensors, Humidity Sensors, Analog Voltage**, and **Open/Close Contacts**.

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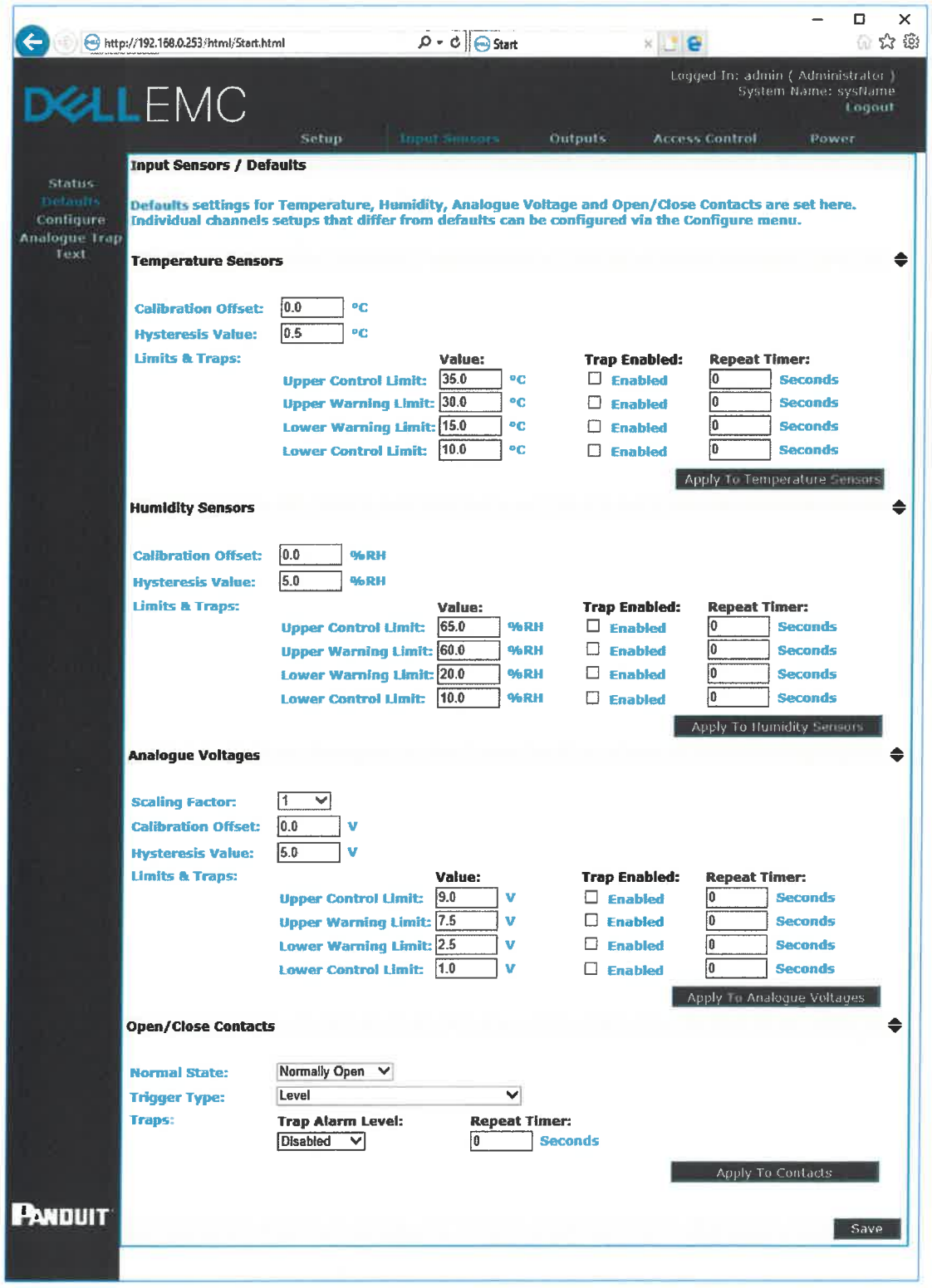
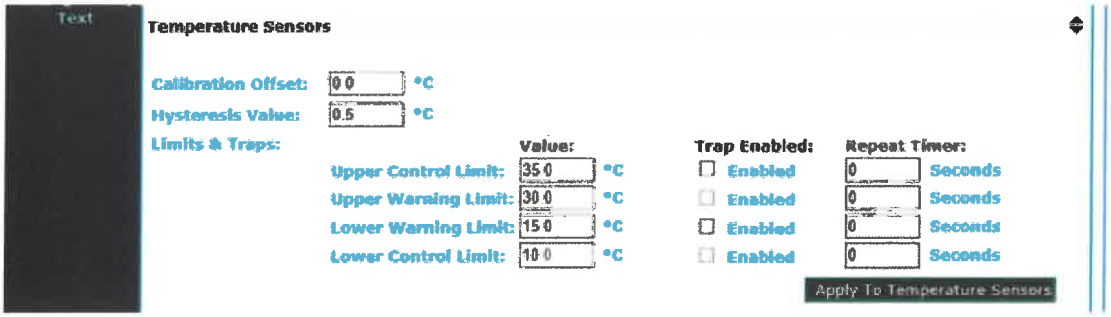
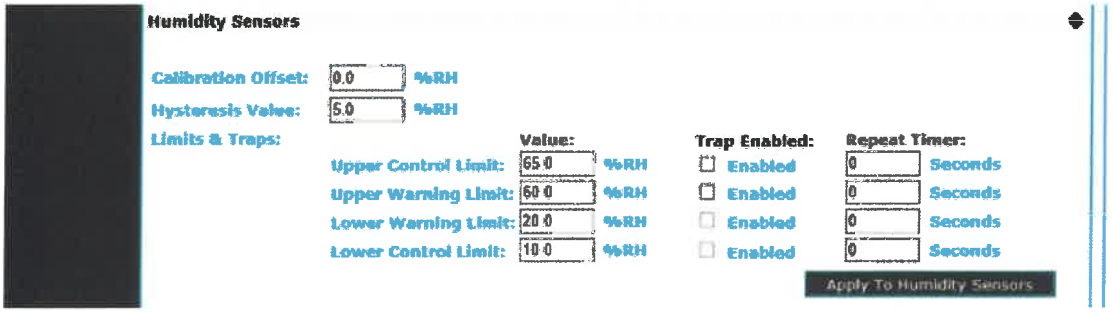

http://192.168.0.253/html/Start.html
Start
DELL EMC
Logged In: admin (Administrator)
System Name: sysName
Logout
Setup
Input Sensors
Outputs
Access Control
Power
Status
Defaults
Configure
Analogue Trap
Text
Input Sensors / Defaults
Defaults settings for Temperature, Humidity, Analogue Voltage and Open/Close Contacts are set here.
Individual channels setups that differ from defaults can be configured via the Configure menu.
Temperature Sensors
Calibration Offset: 0.0 °C
Hysteresis Value: 0.5 °C
Limits & Traps:
Value:
Trap Enabled:
Repeat Timer:
Upper Control Limit: 35.0 °C Enabled 0 Seconds
Upper Warning Limit: 30.0 °C Enabled 0 Seconds
Lower Warning Limit: 15.0 °C Enabled 0 Seconds
Lower Control Limit: 10.0 °C Enabled 0 Seconds
Apply To Temperature Sensors
Humidity Sensors
Calibration Offset: 0.0 %RH
Hysteresis Value: 5.0 %RH
Limits & Traps:
Value:
Trap Enabled:
Repeat Timer:
Upper Control Limit: 65.0 %RH Enabled 0 Seconds
Upper Warning Limit: 60.0 %RH Enabled 0 Seconds
Lower Warning Limit: 20.0 %RH Enabled 0 Seconds
Lower Control Limit: 10.0 %RH Enabled 0 Seconds
Apply To Humidity Sensors
Analogue Voltages
Scaling Factor: 1
Calibration Offset: 0.0 V
Hysteresis Value: 5.0 V
Limits & Traps:
Value:
Trap Enabled:
Repeat Timer:
Upper Control Limit: 9.0 V Enabled 0 Seconds
Upper Warning Limit: 7.5 V Enabled 0 Seconds
Lower Warning Limit: 2.5 V Enabled 0 Seconds
Lower Control Limit: 1.0 V Enabled 0 Seconds
Apply To Analogue Voltages
Open/Close Contacts
Normal State: Normally Open
Trigger Type: Level
Traps:
Trap Alarm Level: Disabled
Repeat Timer: 0 Seconds
Apply To Contacts
PANDUIT
Save

Clicking the arrow opens a drop-down for each Sensor type. For **Temperature Sensors**, the defaults will display similar to the following:



The **Humidity Sensors** screen displays default information as shown below.

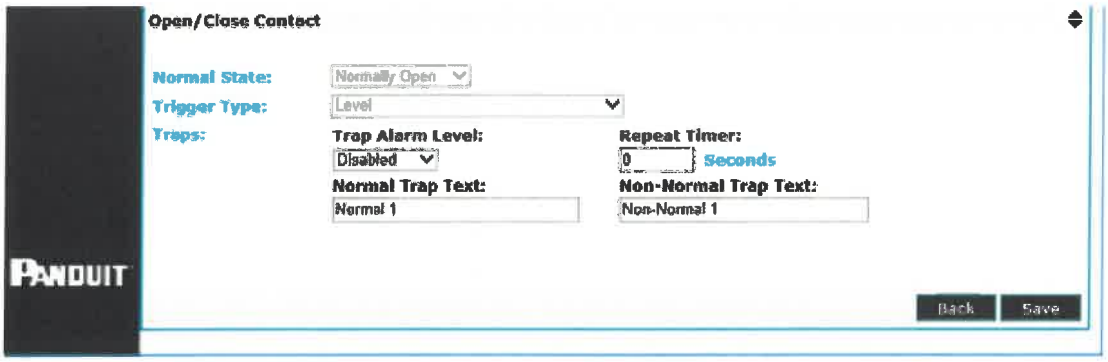


The **Analogue Voltage** screen displays default information as shown below.

Explanations of the editable fields in the drop-down menus for Temperature, Humidity and Analog Voltage can be found in the table below.

Defaults- Temperature, Humidity, and Analog Voltage	
Scaling Factor (Analog Voltage only)	The scaling factor is a value multiplied against the measured Analog Voltage to produce the Input Sensor measurement. *Example*: Given a measurement of 10 Volts on the input sensor and a Scaling Factor of 100, the web UI and SNMP interface will report a value of 10*100 = 1000 Volts as the sensor measured value. **Note**: The **[Upper|Lower] [Control|Warning] Limit** fields apply to the post-scaled value.
Calibration Offset	Alters the actual reading of a sensor by the amount specified. *Example*: If a Calibration offset of 6 was used and a sensor's true reading was 36, the indicated reading used for display and alarm purposes would be 42. This works in an identical way for both temperature and humidity sensors.
Hysteresis Value	The hysteresis default value to be applied to sensors is. The value specified is an offset from a sensor's threshold values. *Example*: A hysteresis value of 5 would mean that in the case of an Upper Control Limits alarm, the alarm value would have to reduce to 5 below the threshold value before another alarm is issued.
Upper Control Limit	The value at which an Upper Control alarm will be issued.
Upper Warning Limit	The value at which an Upper Warning alarm will be issued.
Lower Warning Limit	The value at which a Lower Warning alarm will be issued.
Lower Control Limit	The value at which a Lower Control alarm will be issued.

The **Open/Close Contacts** screen displays the following default information.



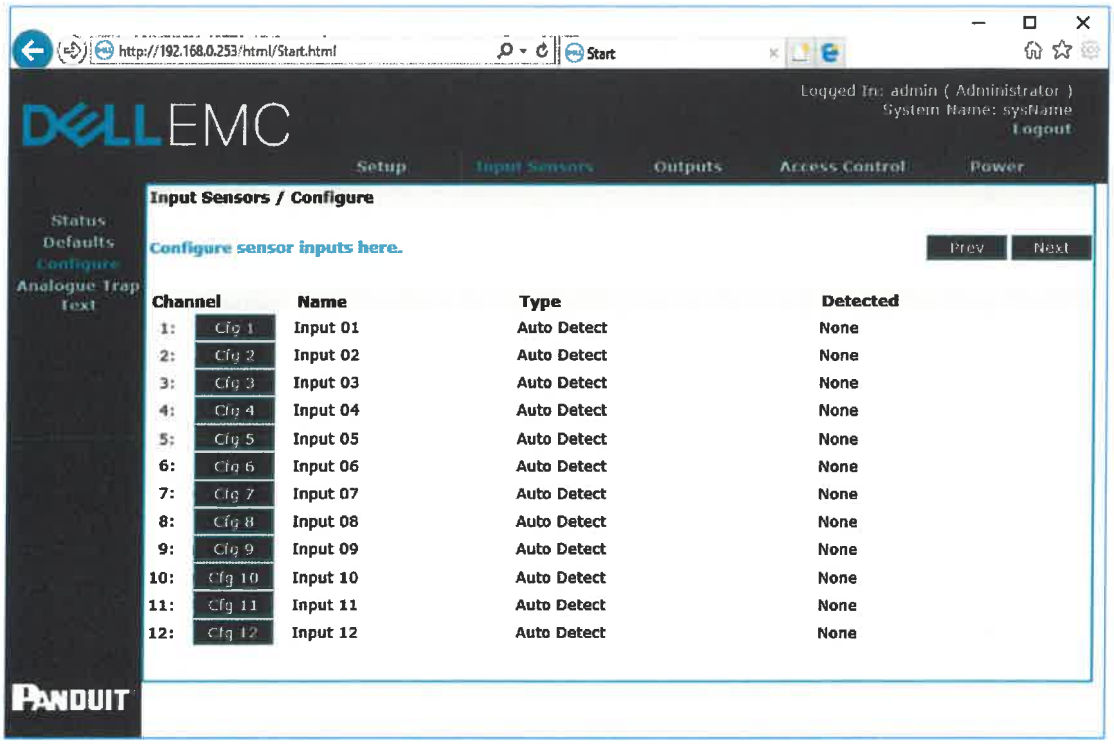
Defaults- Open/Close Contacts	
Normal State	Normal state specifies the condition in which a contact is considered to be 'Normal', 'Non-alarmed' state. Devices such as smoke alarms and air conditioning units often have normally open contacts. In order to receive alarm indications from these types of units, setting normally open would cause alarms to be issued when the monitored contact closes. Setting normally closed, in the case of a rack cabinet door, would cause an alarm condition when the door was opened.
Trap Alarm Level	Rather than using **[Upper|Lower] [Control|Warning] Limit** settings, the **Open/Close Contact** sensors provide a Trap Alarm Level drop down menu with the following options: • Disabled • Critical • Warning • Information When the Trigger Type state occurs, if the **Trap Alarm Level** is not Disabled, a trap with the given Trap Alarm Level string content is generated.
Trigger Types	Trigger type defaults for Open/Close sensors are specified here. The three available options for trigger types are: **Level** Level triggering is the default mode. When an input physically transitions from a Normal to Non-Normal state an

Defaults- Open/Close Contacts	
	alarm will be triggered. However the alarm will only persist while the input remains in a Non-Normal state. When the input returns to a normal state the alarm will be cleared. **Normal to Non-Normal (Positive Edge)** This type of triggering may be used in situations where a momentary type input (e.g. shock sensor, PIR etc.), is used. Since these types of inputs are momentary any alarm condition which occurs, no matter how short, will persist until manually cleared. Positive Edge triggering is used when an alarm is required to persist after an input changes from the Normal state to the Non-Normal state. **Non-Normal to Normal (Negative Edge)** This type of triggering may be used in situations where a momentary type input (e.g. shock sensor, PIR etc.), is used. Since these types of inputs are momentary any alarm condition which occurs, no matter how short, will persist until manually cleared. Negative Edge triggering is used when an alarm is required to persist after an input changes from the Non-Normal state to the Normal state.
Repeat Timer	Causes alarm traps to be reissued after a specified amount of time if the alarm condition is still present. Setting the timer to zero (0) disables repeat traps.

The drop-down menus can be closed by clicking on the corresponding arrows again.

Input Sensors - Configure

You can configure the individual sensor channels in this window.



Select the **Config** option to open a detailed configuration page for the selected sensor.

The difference between the menus presented here and the menus presented on the Defaults page is that settings are applied to individual channels.

The submenus contain all the options in the Defaults menu, plus two additional options:

Name

Sensor channels can be assigned names for ease of identification (for example, "Server Room Sensor" or "UPS Battery Fail").

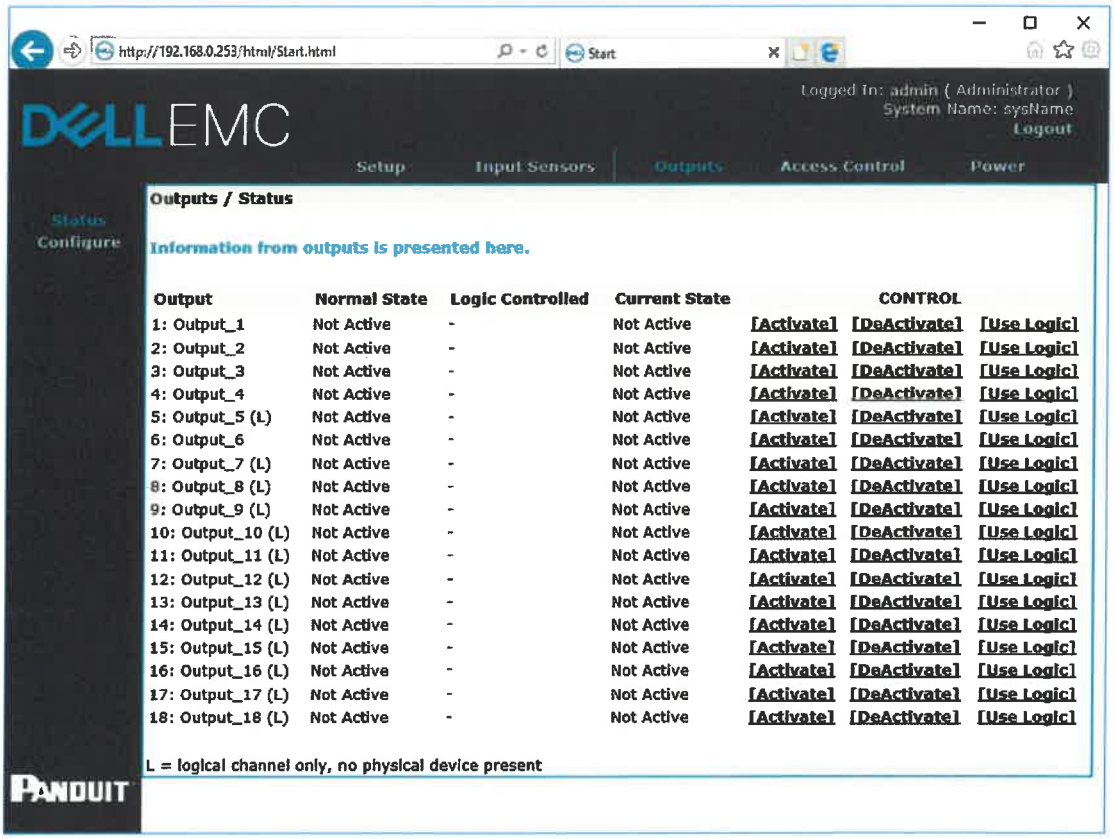
Type

The type of connected sensor is specified here. The sensor channels can be set to auto detect, temperature, humidity, contact, or disabled.

NOTE: Auto Detect is the recommended Type setting for all sensors.

Outputs – Status

The Outputs Status page provides an overview and direct control of the IPI Appliance EPA126's four output relays.

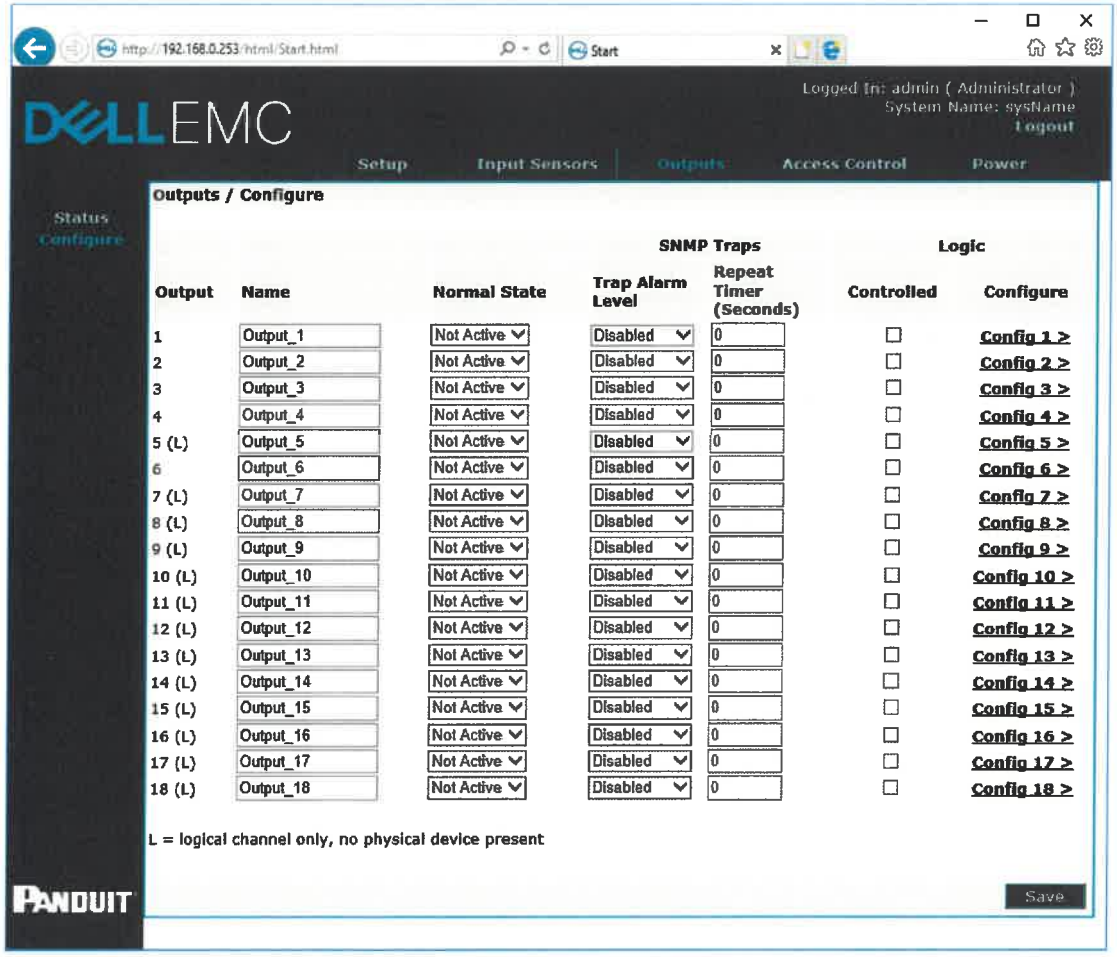


Control

- **Activate**: Commands the selected relay to energize.
- **Deactivate**: Commands the selected relay to de-energize.
- **Use Logic**: Commands the selected relay to enter logic-controlled mode. In logic-controlled mode, the activation and deactivation is governed by any configured and enabled logic.

Outputs – Configure

Relay and logic configuration is performed via two pages.



- **Name**: The relay output name is specified here. (for example, Fan_Tray or Door_1).
- **Normal State**: Normal State specifies the 'normal' or 'non-alarm' state of a relay.
  - **Not Active**: Specifies that a output relay in a 'Not Active' ('not-energized) state is normal.
  - **Active**: Specifies that an output relay in an 'Active' ('Energized) state is normal.
- **Trap Alarm Enabled**: Toggles alarm trap generation. An alarm trap will be generated when the relay is in an alarm state with this enabled.
- **Repeat Timer (Seconds)**: Specifies an interval in which a trap for an *existing* alarm condition will be regenerated. This will be a duplicate of the original trap. A

repeat timer is not necessary in NMS systems employing intelligent trap handling. Setting zero (0) disables repeat traps.

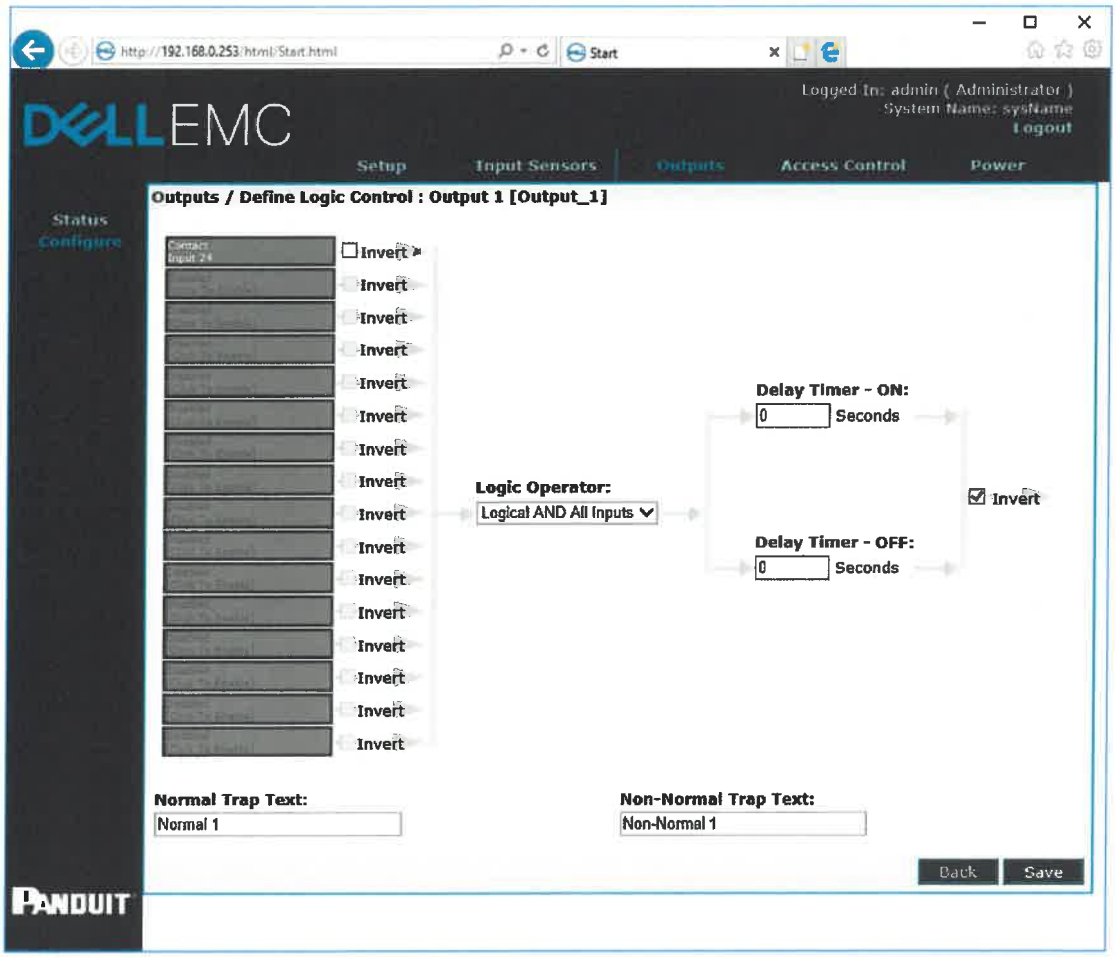
- **Controlled**: This toggle acts as a master control to any logic configured for a relay. When selected **Use Logic** may be enabled on the Status page.

  It is only possible to select this option if logic has been specified in the **Relay Specific Configuration** page.

- **Configure**: Click on the **Config** link for the desired output to open the Outputs - Configure - Config window.

Outputs - Configure - Config

Actual Digital Output Relay logic configurations are specified here.



Input Selection

Select Inputs into the logic on the left hand side by clicking one of the **Click to Enable** boxes. Here you can choose a sensor type, sub-type, and name to feed into logic.

Invert

The Invert check box allows the logic inversion of an input into the logic.
For example, when an upper warning limit is breached, the following input logic is used.

	No Invert	Invert
Threshold breached	1 (Logic Triggering)	0 (Not Logic Triggering)
Threshold within limit	0 (Not Logic Triggering)	1 (Logic Triggering)

Logic Operator

The Logic Operator provides options that control the evaluation of inputs to logic.

Logical AND Inputs

Logical AND requires **ALL** of the selected inputs to the logic to be in a triggering state to activate the relay logic.

Logical OR Inputs

Logical OR requires only ONE of the selected inputs to be in a triggering state to activate the relay logic.

Delay Timer On

Delay Timer On specifies the time in seconds that must elapse before the logic activates in a situation where it would otherwise activate immediately.

This is useful in a situation where you want a delay to be added before a logic controlled relay is switched on.
If the logic triggering condition clears before the specified time has elapsed then the logic will not activate at all.

Delay Timer Off

Delay Timer Off specifies the time in seconds which must elapse before the logic deactivates in a situation where it would otherwise deactivate immediately.

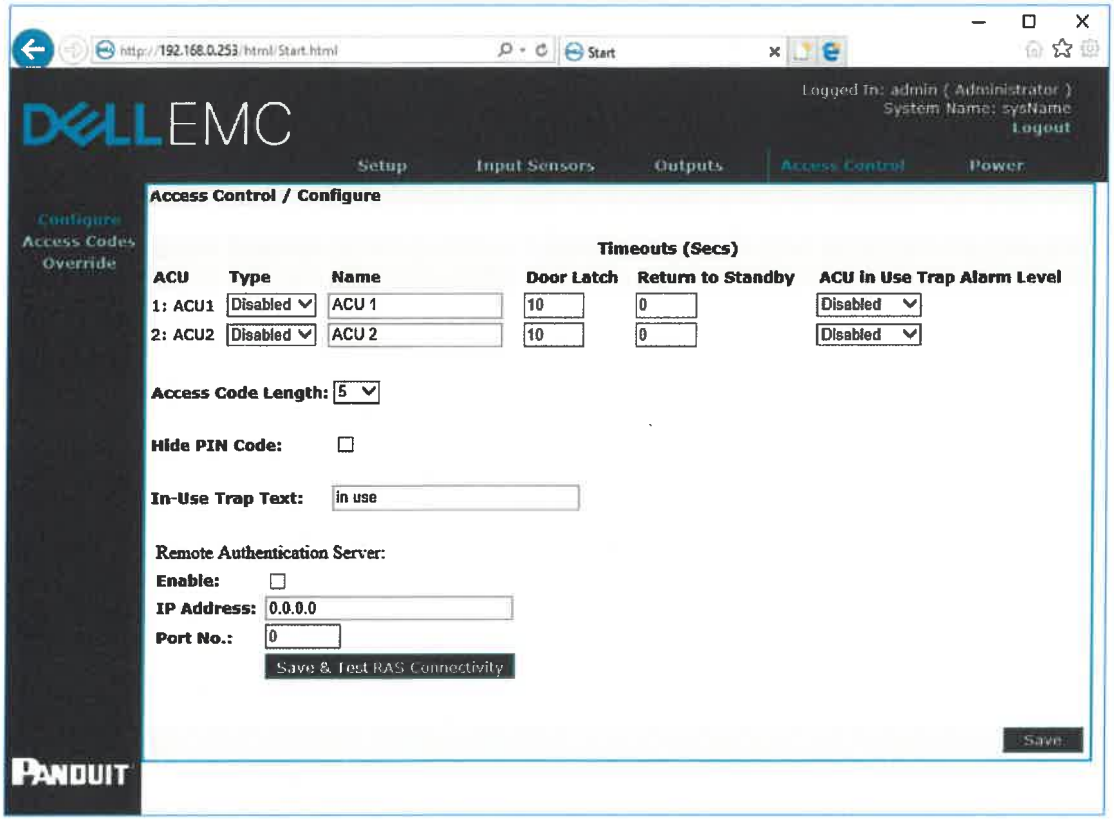
This is useful in a situation where you want a delay to be added before a logic controlled relay is switched off from a current on state. If the logic triggering condition returns before the specified time has elapsed then the logic will not deactivate at all.

Final Invert

A final invert check box is provided. This allows the final output logical state to the relay to be inverted. Any conditions that produce a relay on output will produce the reverse.

Access Control – Configure

Configure keypad devices physically attached to the unit at this screen.



ACU

ACU KP1 and KP2 refer to the two physical keypad connection ports found on the rear of the unit.

Type

Two types of supplied keypads are supported by the unit: 2x5 and 3x4.

Name

A keypad name can be specified here for alarm logging and notification reasons. Front_ Door or Rear_Door are common choices.

Timeouts - Door Latch

Since the most common use of the keypad is to activate a solenoid to provide rack access, a door latch timer is provided. The time in seconds specified here controls how long a valid keypad entry will provide a positive input to relay logic. In most situations, this controls how long a door solenoid remains activated after a valid keypad code is entered.

Timeouts – Return to Standby

This parameter specifies the time in seconds that must elapse before the keypad returns to standby after an incomplete code is entered.

ACU In Use Trap

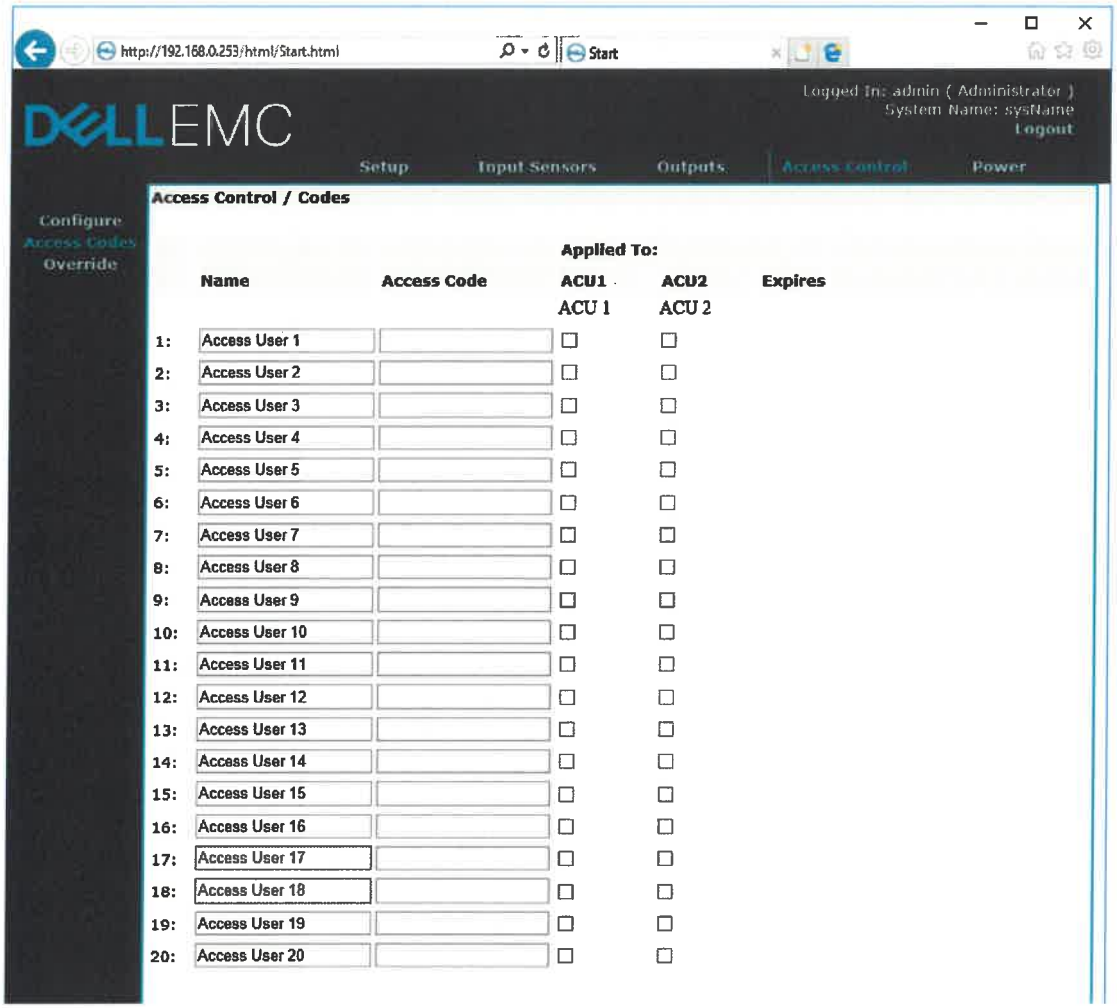
Selecting this option causes a keypad-in-use trap to be produced when any button is pressed on the keypad. This trap will be produced regardless of the entered code's validity.

Access Code Length

An Access Code Length of between 1 and 15 digits can selected here. This Access Code Length applies to all pin codes defined on the Access Control – Pin Codes screen. Any pin codes that do not match the length specified here will be unusable.

Access Control – Codes

Access Codes are specified and applied to one or both keypads here.



Name

A user or group name can be specified here for association with an Access Code.

Access Code

Pin codes can be entered here. Pin code length can range from 1 to 15 digits.

Regardless of PIN length used here, only Pin codes of the length specified by the **Pin Code Length** setting on the Access Control – Configure page will be usable.

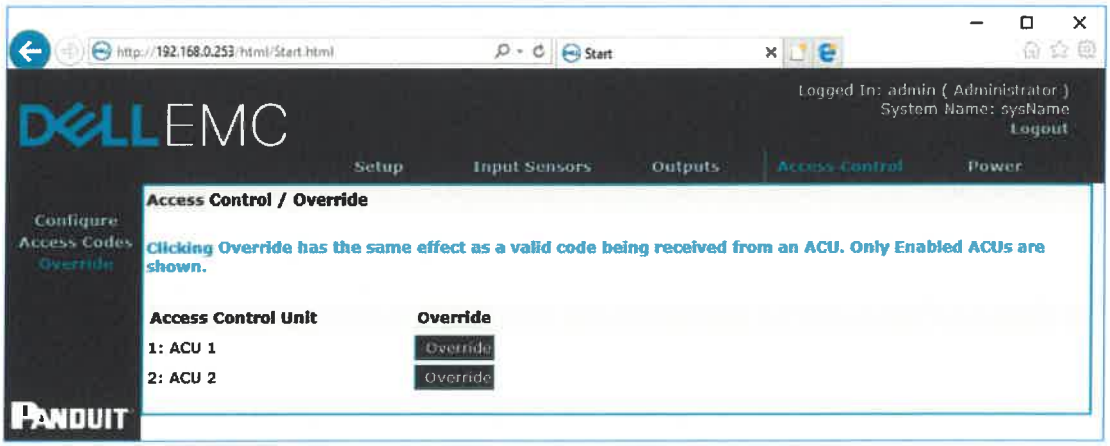
Applied To

The check boxes allow PIN codes to be associated with a given keypad or both.

A PIN Code line must have a check box selected for a given keypad if the code is to be considered valid for that pad.

Access Control – Override

This page allows a valid entry to be sent to a keypad remotely. This function is useful in a situation where it may be necessary to grant access to a rack remotely.

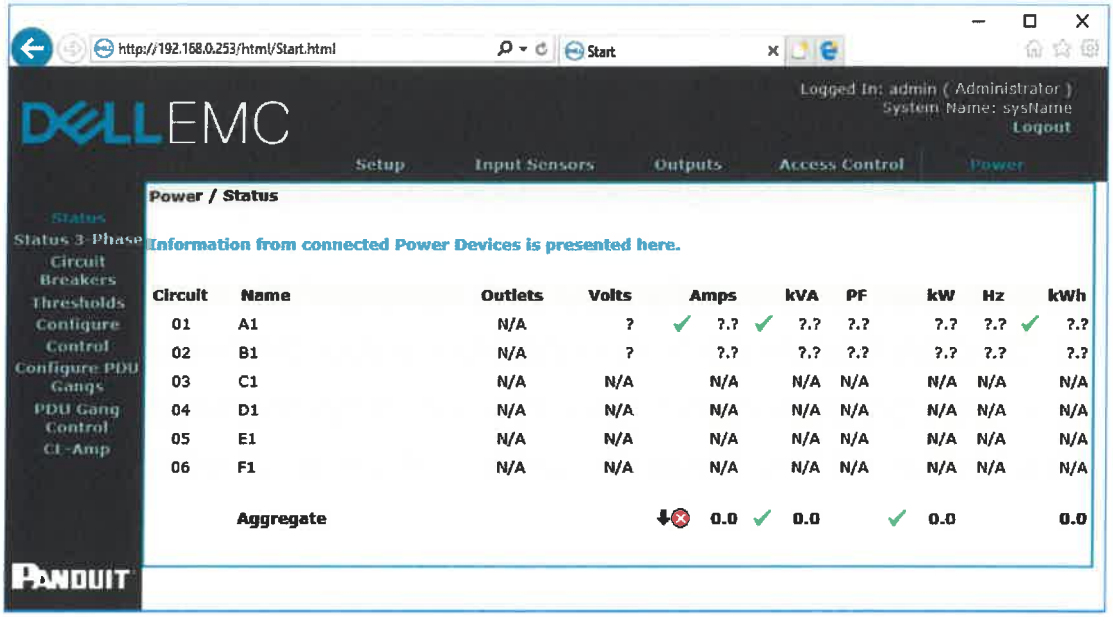


The Override buttons for each enabled keypad direct a 'valid PIN Code' command without the need to enter one physically at the keypad.

Power – Configuration and Status

Power - Status

The Power -Status page presents an overview of connected rack PDUs. The page displays the PDU channel number, name, voltage, and current thresholds.



Status Indicators

Three status indicators are displayed next to PDU channels to allow quick determination of normal, warning, and critical alarm statuses:

✓	Channel reading currently within threshold limits.
⚠	Upper or lower Warning limit reached or exceeded.
⊗	Upper or lower Critical limit reached or exceeded.

Power - Configure

The Power - Configure menu provides the ability to configure individual PDU options. You can configure the two PDU channels individually by selecting the **Config** option

next to each channel.

A summary of several current configuration parameters is displayed on a per-PDU channel basis.

Control Method

The Control Method parameter specifies which control methods are available to control the outlets on PDUs attached to the unit.

HTTP + SNMP

The Web Management Interface and SNMP can be used to command PDU outlets.

HTTP Only

This option allows only the Web Management Interface to command PDU outlets. This effectively disables SNMP PDU outlet control.

SNMP Only

This option allows only SNMP to command PDU outlets.
This effectively disables the Web Management Interface PDU outlet control.

RS232 Only

This option allows PDU control commands to be issued directly to a unit via the onboard RS232 port. This option disables the Web Management Interface and SNMP control.

Cycle Up/Down Delay

This parameter specifies the interval in seconds between switching on and switching off outlets when an entire PDU strip is cycled (all outlets commanded on or off).

Repeat Timer (on Comms Failure)

This parameter specifies the interval in seconds between when an initial PDU comms failure trap is produced and a repeat trap is issued.

Reboot Delay

This parameter specifies how long (in seconds) an outlet remains off after a reboot before switching back on.

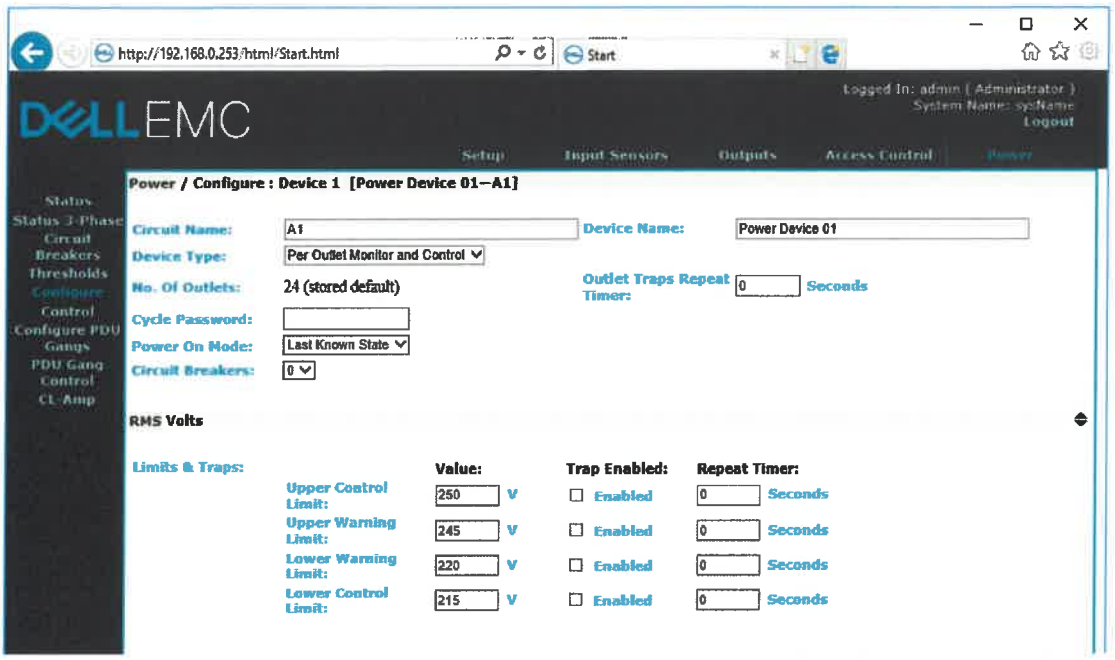
Abort Cycle Delay

This parameter specifies how many seconds must elapse before a commanded cycle begins on a PDU. This delay gives the user time to reverse the decision to cycle a PDU before any outlet states are changed.

If you do not want to use this functionality, set the delay to zero.

Power – Configure Menu for Individual Device

By clicking the **Cfg** button on the Configure you can access a screen that allows all the available options for a specific Device to be specified.



Circuit Name

Individual PDUs can be assigned names for ease of identification (for example, "Rack 5 PDU Sensor" or "Comm Room").

Device Type

Specify the type of PDU connected to channel here.

Number of Outlets

This parameter specifies the number of controllable outlets present on a PDU. This is required when the **Control Only** or **Monitor and Control** options have been selected.

For example, if you have a PDU consisting of 24 Outlets, one of which is a permanent live (non-switching) outlet, 23 outlets would be specified.

Warning: Failure to specify the correct number of outlets can lead to the incorrect outlet being switched on or off.

During unit setup and deployment, you should select the **Control Only** or **Monitor and Control** options before critical loads are connected to outlets.

Cycle Password

This field specifies the password required to set a power cycle of outlets on a controllable strip. This password is used when switching outlets using SNMP, not when switching via the web interface.

Power on Mode
In the event that power to the PDU is lost, this parameter specifies how the outlets will be switched back on once power is restored.

Additional Parameters

Below the Power On Mode selection is a series expandable settings. These settings are:

- RMS Volts
- RMS Current
- Total Energy (kWh)
- Apparent Power (kVA)
- True Power (kW)
- Power Factor
- Power Strip Outlets

For each of these setting types, click the small arrow on the right to show or hide the corresponding values. These values are identical for each setting, and are described below.

Limits and Traps
You can specify values for voltage, current, and total power thresholds here. You also can enable or disable traps for each threshold. The following thresholds can be set:

- Upper Control Limit
- Upper Warning Limit
- Lower Warning Limit
- Lower Control Limit

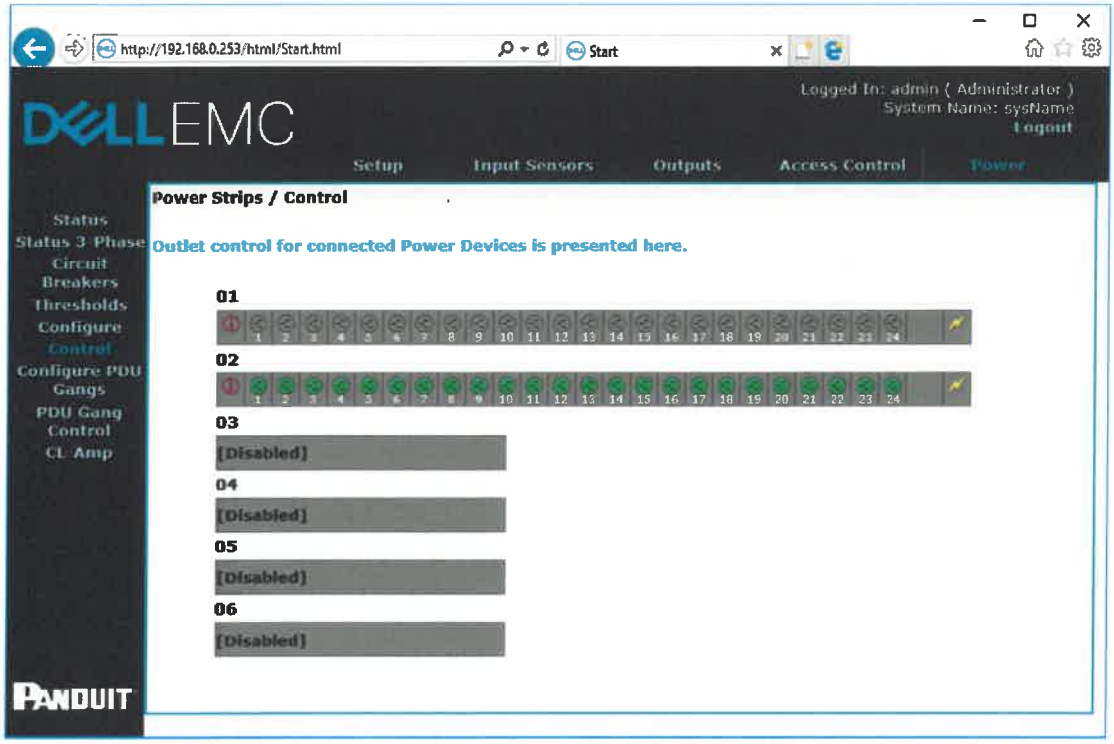
Note: There are no lower limits for total power, because total power consumption can only go up, not down.

Trap Enabled
Check the appropriate box to enable the trap.

Repeat Timer
In the event of a communications failure with a connected PDU, this entry specifies how often (in seconds) Comm Fail traps will be generated.

Power – Control

Individual outlets or all outlets on a given PDU can be switched on and off using this screen.



The display consists of a visual representation of PDUs that have **Control** or **Monitor and Control** enabled on the Configure page.

PDUs that are **Disabled** or in **Monitor Only** status do not display any outlet graphics and are displayed with appropriate text.

PDU inputs are numbered 1 to 2 in ascending order. PDU numbers correspond to the physical input ports on the rear of the IPI Appliance unit.

Switching Individual Sockets

When you click on a socket, a control menu above the socket displays further information. Three control options are also presented:

On
Selecting this option commands the selected outlet to switch On. If the outlet is already on this will have no effect.

Off
Selecting this option commands the selected outlet to switch Off.
If the outlet is already off this will have no effect.

Reboot
The reboot option commands the selected outlet to switch off. After the time specified by the Reboot Delay timer has elapsed, the outlet will automatically switch itself back On.

Switching an Entire Strip

You can switch all the outlets on any strip Off or On with a single command by clicking the **Lightning Bolt** symbol on the end of a PDU graphic.

A small dialog displays, offering the following options:

On
This option commands all outlets on a selected PDU to switch on. Any outlets already on will remain on; any currently off will be switched on.

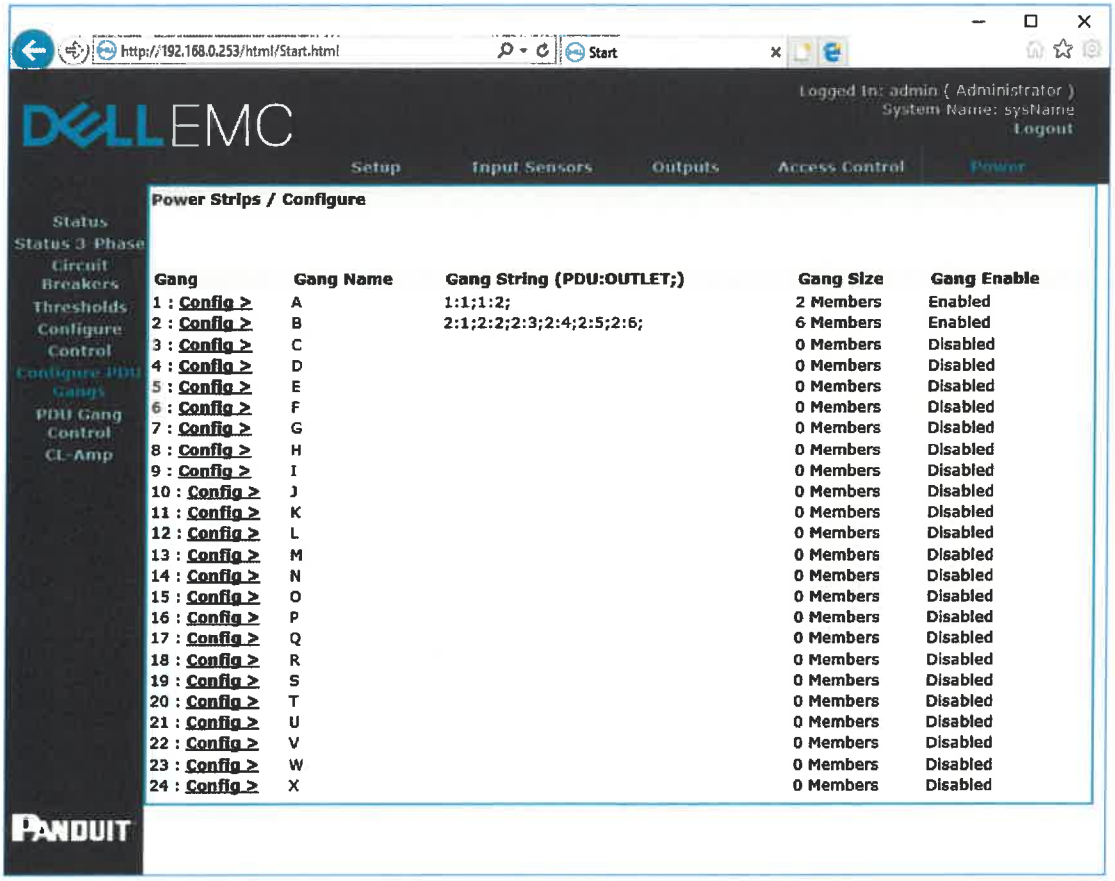
Off
This option commands all outlets on a selected PDU to switch off. Any outlets already off will remain off; any currently on will be switched off.

Abort!
Once a command has been issued to turn all outlets on a PDU on or off, you can click the **Abort!** button to abort the command.

The Abort Cycle delay option on the PDUs – Configure – Config menu specifies the time allowed in seconds for an abort to be issued.

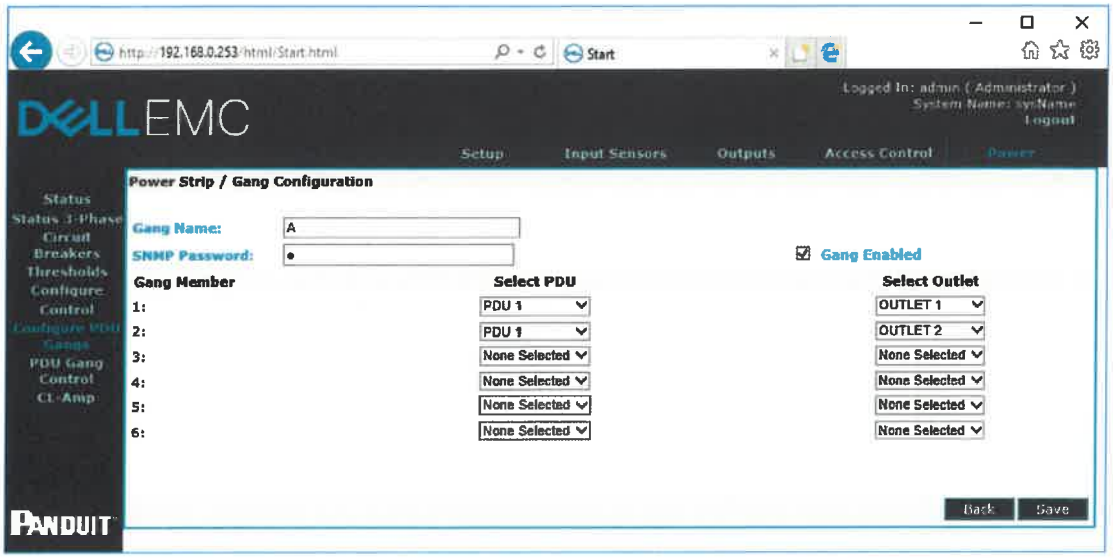
Power - Configure PDU Gangs

The **Configure PDU Gangs**screen allows you to configure individual outlets into logical groups.



To begin creating an PDU Gang, click **Config** next to the desired Gang Name. The Configuration screen appears, as shown below. Enter a **Gang Name** and **SNMP Password** and click the **Gang Enabled** box to enable the gang.

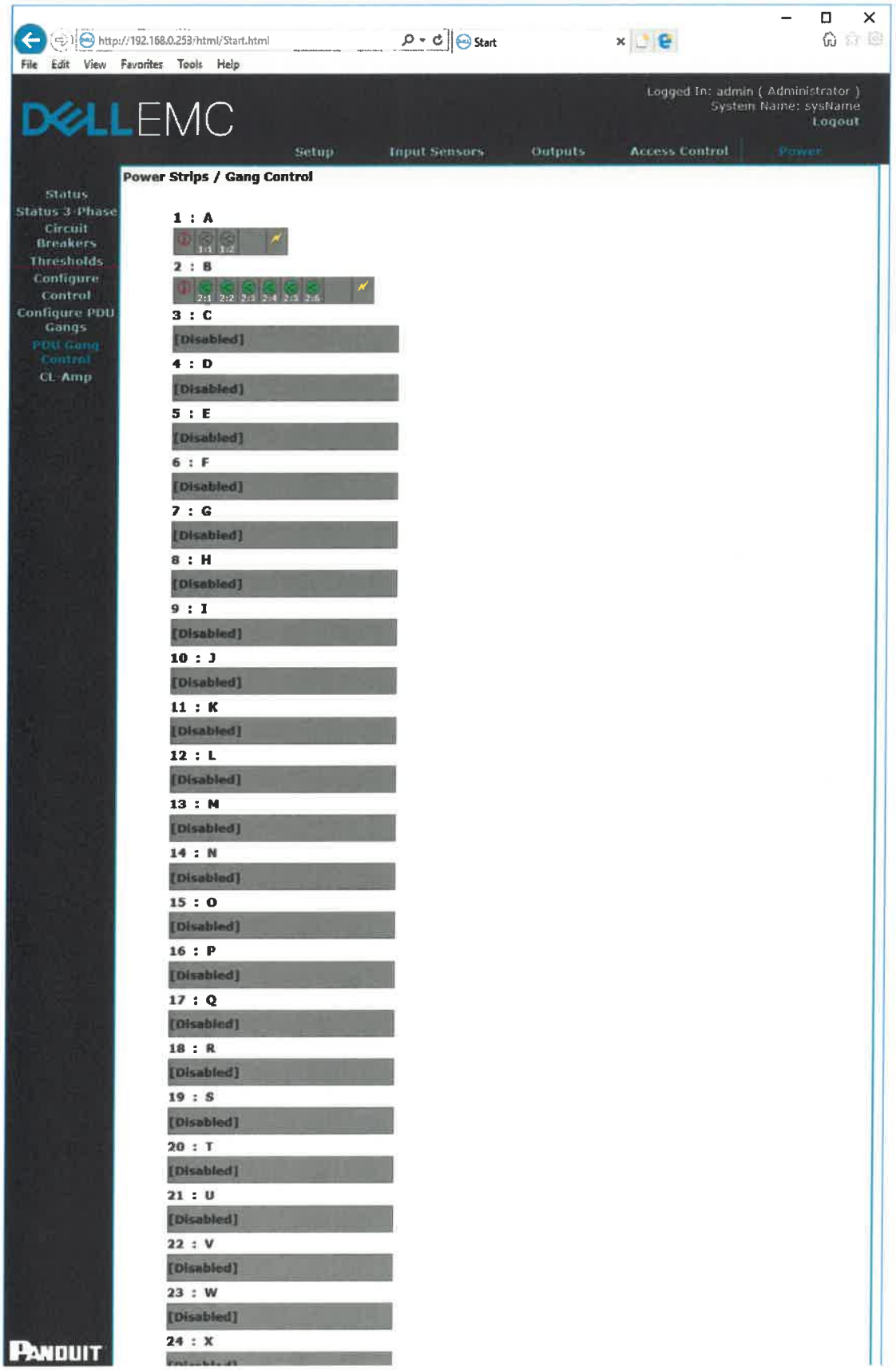
Select the members of the gang by selecting individual outlets from the drop down outlet list.



Click the **Save** button to create the PDU Gang.

PDU Gang Control

The PDU Gang Control screen is similar to the Control screen, except that logical groups are displayed rather than individual outlets. The screen below shows the display for a PDU Gang.


http://192.168.0.253/html/Start.html
Start
File Edit View Favorites Tools Help
DELL EMC
Logged In: admin (Administrator)
System Name: sysName
Logout
Setup
Input Sensors
Outputs
Access Control
Power
Status
Status 3-Phase
Circuit Breakers
Thresholds
Configure
Control
Configure PDU Gangs
PDU Gang Control
CL-Amp
Power Strips / Gang Control
1 : A
2 : B
3 : C
[Disabled]
4 : D
[Disabled]
5 : E
[Disabled]
6 : F
[Disabled]
7 : G
[Disabled]
8 : H
[Disabled]
9 : I
[Disabled]
10 : J
[Disabled]
11 : K
[Disabled]
12 : L
[Disabled]
13 : M
[Disabled]
14 : N
[Disabled]
15 : O
[Disabled]
16 : P
[Disabled]
17 : Q
[Disabled]
18 : R
[Disabled]
19 : S
[Disabled]
20 : T
[Disabled]
21 : U
[Disabled]
22 : V
[Disabled]
23 : W
[Disabled]
24 : X
PANDUIT

All of the functionality of the Power-Control screen is also available here. See the Power-Control section for details.

CL-Amp

Not applicable.

Temperature Sensor Adapter Installation

Follow the instructions below to install the ZAHTLADT-02 v1.01.01 temperature sensor adapter module. This adapter allows legacy sensors to provide more accurate temperature readings.

Note: This adapter does not work with the ZETHL-14 temperature sensor.

New Installations

Follow these instructions when you are installing a standard temperature sensor, but the upgraded sensor input is required.

1. Plug the adapter directly into the back of the Appliance, at the sensor port to be used for temperature.
2. Plug the temperature sensor connector into the adapter.
3. Update the IPI Appliance EPA126 firmware to the latest release.

Existing Installations.

Follow these instructions when the sensor is already installed along with the IPI Appliance EPA126.

1. Unplug the current temperature sensor from the Appliance, noting the location where it resided.
2. Insert the adapter into that location.
3. Plug the sensor into the end of the adapter.
4. Perform these steps for all other temperature sensors to be changed.
5. The IPI Appliance EPA126 firmware must be updated to the latest version.

Fitting the Adapter In-line.

This procedure is not recommended, but it may be the only solution in some cases.

1. Using a patch lead from the Appliance and an RJ45 Jack to Jack through connector on its non-Appliance end, plug the adapter RJ45 Plug into the through connector.
2. Plug either the RJ45 plug of a temperature sensor into the jack on the adapter or a patch lead with the temperature sensor on the end.

Troubleshooting

Resetting the IPI Appliance EPA126 to Factory Default Settings

To reset the Appliance unit to factory defaults, perform the following steps:

1. Press and release the **Reset** button on the front of the unit. The Alarm LED will flash twice (off/on, off/on).
2. Immediately press and hold the **Mode** button until the alarm LED goes off.
3. Immediately press and release the **Reset** button.

NOTE: The unit will now restart. The Status LED will start flashing after around 1 minute. The reset process is complete, and the IP address is set to the default 192.168.0.253.

Problem: The NMS Cannot Poll the IPI Appliance EPA126

- **Solution**:Make sure the network is properly connected to the Appliance unit.
- **Solution**:Make sure the cable is in good condition.
- **Solution**:Try pinging the Appliance unit from another computer on the same network segment as the Appliance unit.
- **Solution**:Ensure that the NMS IP Address is in the NMS table of the Appliance unit.
- **Solution**:Ensure that the community string has been set for the NMS via the Web Management Interface.

Technical Support

For technical support for the IPI Appliance EPA126 system, please contact Panduit Technical Support using one of the following methods:

Panduit Technical Support

Severity 1 & 2 Issues, Call 24/7:

Americas: 1-866-721-5302

EMEA: 44-1291-674661

Severity 3 & 4 Issues, Email - normal business hours:

systemsupport@panduit.com

Appendix A: Technical Details

Factory Default Settings

IP Address:	192.168.0.253
Subnet Mask:	255.255.255.0 (/24)
Default Appliance:	192.168.0.1
Web Management Address:	http://192.168.0.253/
Default username:	admin
Default password	admin

Operating Information

Input Power:	100-240 VAC (45W) 50-60 Hz
Operating Temperature:	0 ^{O}C to 40 ^{O}C
Storage Temperature:	-10 ^{O}C to 70 ^{O}C
Operating Humidity:	5% to 90% RH
Storage Humidity:	5% to 100% RH

CAUTION: There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

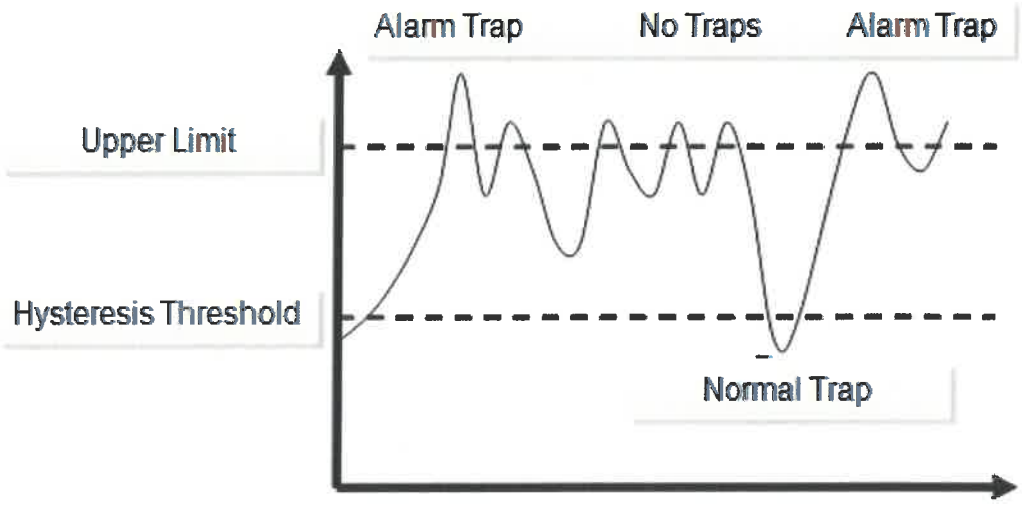
Appendix B: Hysteresis Demystified

When a temperature or humidity limit is reached and the relevant limit has its OFF to ON Trap enabled, an alarm trap is issued by the IPI Appliance unit.

With a zero hysteresis setting, the traps will continue to be generated each time the limit is reached.

This may be undesirable in a situation where the temperature or humidity level measure has reduced by only a small amount before rising again and triggering further traps.

The hysteresis function is provided to prevent further alarm traps from being generated until the measured value has fallen to a satisfactory level.



As shown in image above, the humidity first rises past its upper warning threshold, which generates an alarm trap.
The humidity then reduces slightly but does not reduce to the hysteresis level, which is 1.5% relative humidity lower than the alarm setting (1.5% relative humidity lower as an absolute measured value, rather than 1.5% of currently measured value).

Humidity then increases and decreases again. However, on the second decrease of humidity the level drops below the hysteresis level. The Humidity falling below the hysteresis level re-enables alarm traps for the next alarm event. An upper limit of 25 and a hysteresis threshold of 1.5 yield a threshold limit of 23.5.

The humidity level again begins to rise and again exceeds the upper limit, however this time an alarm trap is generated again.

The Hysteresis feature acts on the following Temperature and Humidity thresholds:

- Upper Control Limit (UCL)
- Lower Control Limit (LCL)
- Upper Warning Limit (UWL)
- Lower Warning Limit (LWL)

The inverse of the above description is true when applied to Temperature and Humidity lower control and warning limits.

You can configure the hysteresis threshold by using the menu options.

Appendix C: Networking Reference

Reference

This section discusses SNMP communities, IP addressing, subnet masking, routers and gateways.

Communities

A community is a string of printable ASCII characters that identifies a user group with the same access privileges. For example, a common community name is "public".
For security purposes, the SNMP agent validates requests before responding. The agent can be configured so that only managers that are members of a community can send requests and receive responses from a particular community.
This prevents unauthorized managers from viewing or changing the configuration of a device.

IP Addresses

Every device on an internetwork must be assigned a unique IP (Internet Protocol) address. An IP address is a 32-bit value comprised of a network ID and a host ID.
The network ID identifies the logical network to which a particular device belongs. The host ID identifies the particular device within the logical network.
IP addresses distinguish devices on an internetwork from one another so that IP packets are properly transmitted.
IP addresses appear in dotted decimal (rather than in binary) notation. Dotted decimal notation divides the 32-bit value into four 8-bit groups, or octets, and separates each octet with a period.
For example, 199.217.132.1 is an IP address in dotted decimal notation.
To accommodate networks of different sizes, the IP address has three divisions - Classes A for large, B for medium, and C for small.

The difference among the network classes is the number of octets reserved for the network ID and the number of octets reserved for the host ID:

Class	Value of First Octet	Network ID	Host ID	Number of Hosts
A	1-126	first octet	last three octets	16,387,064
B	128-191	first two octets	last two octets	64,516
C	192-223	first three octets	last octet	254

Any value between 0 and 255 is valid as a host ID octet except for those values reserved by the IPv4 standard for other purposes:

Value	Purpose
0, 255	Network Number & Broadcast
127	Loopback testing and interprocess communication on local devices
224-254	IGMP multicast and other special protocols

Subnetting and Subnet Masks

Subnetting divides a network address into subnetwork addresses to accommodate more than one physical network on a logical network.
For example: A Class B company has 100 LANs (Local Area Networks) with 100 to 200 nodes on each LAN.
To classify the nodes by its LANs on one main network, this company segments the network address into 100 subnetwork addresses (If the Class B network address is 150.1.x.x, the address can be segmented further from 150.1.1.x through 150.1.100.x.).
A subnet mask is a 32-bit value that distinguishes the network ID from the host ID for different subnetworks on the same logical network.
Like IP addresses, subnet masks consist of four octets in dotted decimal notation.
You can use subnet masks to route and filter the transmission of IP packets among your subnetworks.
The value "255" is assigned to octets that belong to the network ID, and the value "0" is assigned to octets that belong to the host ID.

Network Mask	Routing and Filtering
255.0.0.0	Class A network. First octet defines network number. Final three octets define host address. Valid Class A network numbers are in the range 1 to 126.
255.255.0.0	Class B network. First 2 octets define network number. Final two octets define host address. Valid class B network numbers are in the range 128.0.x.x to 191.255.x.x
255.255.255.0	Class C network. First 3 octets define network number. Final octet defines host address Valid class C network numbers are in the range. 192.0.0.x 223.255.255.x

Gateways

A gateway, also sometimes referred to as a router, is any device with two or more network adapters connecting to different physical networks.
Gateways allow for transmission of IP packets between different networks on an internetwork.

APPENDIX E – STAFF CERTIFICATIONS

ViON provides documentation of our Staff Certifications in our response to 4.3 in this Appendix on the following pages.

Project Management Institute

THIS IS TO CERTIFY THAT

Matthew V. Weaver

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

Joseph J. Cahill • Chief Executive Officer

PROJECT MANAGEMENT INSTITUTE CORPORATE SEAL 1969 PENNSYLVANIA

PMP® Number [redacted]

PMP® Original Grant Date **11 January 2016**

PMP® Expiration Date **10 January 2022**

PMI® Project Management Institute

Leadership Strategies Institute

This Certifies That

Pat Mooney

has successfully completed

The Effective Facilitator

on this 19th day of December, 2019.

Project Management Institute
Registered Education Provider

Provider #: 3760
Activity #: effecfacil15
PDUs: 24 PMP/PgMP | 24 PMI-ACP
2.50 PMI-SP | 1.25 PMI-RMP

Leadership Strategies

Mark Smith, Senior Manager
Leadership Strategies Institute

PeopleCert®
All talents, certified.

AXELOS
GLOBAL BEST PRACTICE

This is to certify that

Patrick Mooney

Has achieved the

ITIL® Foundation Certificate in IT Service Management

Effective from **02 Feb 2019**

Expiry date **N/A**

Certificate number [redacted]

Candidate number [redacted]

Mark Basham, CEO, AXELOS

Panoraia Theleriti, Certification Qualifier, PeopleCert

Printed on 4 February 2019

This certificate remains the property of the issuing Examination Institute and shall be returned immediately upon request.

ITIL RESILIA PRINCE2 PRINCE2 AGILE AgileSHIFT MSP M_o_R P3M3 P3O MoP MoV

Project Management Institute

THIS IS TO CERTIFY THAT

Patrick T. Mooney

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

PROJECT MANAGEMENT INSTITUTE CORPORATE SEAL 1969 PENNSYLVANIA

PMP® Number: [redacted]
PMP® Original Grant Date: 02 November 2015
PMP® Expiration Date: 01 November 2024

Project Management Institute.

Project Management Institute

THIS IS TO CERTIFY THAT

Patrick T. Mooney

HAS BEEN FORMALLY EVALUATED FOR EXPERIENCE, KNOWLEDGE AND SKILLS IN THE SPECIALIZED AREA OF AGILE PRINCIPLES, PRACTICES, TOOLS AND TECHNIQUES AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

PMI Agile Certified Practitioner (PMI-ACP)®

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

Mark Dickson • Chair, Board of Directors

Mark A. Langley • President and Chief Executive Officer

PROJECT MANAGEMENT INSTITUTE CORPORATE SEAL 1969 PENNSYLVANIA

PMI-ACP® Number [redacted]

PMI-ACP® Original Grant Date 20 November 2017

PMI-ACP® Expiration Date 19 November 2020

PMI Project Management Institute

Brian Awig

has successfully completed the AWS Certification requirements and has achieved their:

AWS Certified Solutions Architect - Associate

Issue Date
Oct 12, 2018

Expiration Date
Oct 12, 2021

Maureen Lonergan
Director, Training and Certification

Validation Number 3XHFBBMKBBFQ17CT
Validate at: http://aws.amazon.com/verification

Commvault Certified

Commvault Education Services Recognizes

Brian Awig

as a

Commvault Certified Professional V10

On this 23rd day of December 2013

Certificate ID: [redacted]

CERTIFIED commvault professional

Senior Director, WW Technical Enablement

Commvault Certified

Commvault Education Services Recognizes

Brian Awig

as a

Commvault Certified Professional V11

On this 19th day of July 2016

Certificate ID: [redacted]

Senior Director, WW Technical Enablement

Commvault Certified

Commvault Education Services Recognizes

Brian Awig

as a

Commvault Certified Specialist
Disaster Recovery V10

On this 17th day of October 2014

Certificate ID: [redacted]

Senior Director, WW Technical Enablement

Commvault Certified

Commvault Education Services Recognizes

Brian Awig

as a

Commvault Certified Specialist
Virtual Data Management V10

On this 10th day of October 2014

Certificate ID: [redacted]

Senior Director, WW Technical Enablement

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Nutanix Certified Professional 5.5 (NCP-5)

Completion Date:
Sunday, January 27, 2019

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Nutanix Certified Sales Representative (NCSR), Level 1

Completion Date:
Thursday, January 10, 2019

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Nutanix Certified Sales Representative (NCSR), Level 2

Completion Date:
Monday, January 28, 2019

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Nutanix Certified Sales Representative (NCSR), Level 3

Completion Date:
Monday, January 28, 2019

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Nutanix Certified Systems Engineer (NCSE), Level 1

Completion Date:
Tuesday, January 29, 2019

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Nutanix Platform Professional 5.0 (NPP-5)

Completion Date:
Tuesday, April 25, 2017

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Services: Consulting Partner Installer (NCPI)

Completion Date:
Wednesday, December 13, 2017

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Services: Core Competency Install & Configure (CCIC)

Completion Date:
Monday, December 04, 2017

Dheeraj Pandey, CEO

CERTIFICATE of ACHIEVEMENT

Brian Awig

Has Completed the Requirements for

Services: Nutanix Consulting Specialist (NCS)

Completion Date:
Monday, July 16, 2018

Dheeraj Pandey, CEO