

VIRGINIA INFORMATION TECHNOLOGIES AGENCY (VITA)

SERVER, DATA CENTER, AND SECURITY SERVICE

Response To:
REQUEST FOR INFORMATION (RFI) 2017-14



Prepared For:

VIRGINIA INFORMATION TECHNOLOGIES AGENCY (VITA)

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VITA Supply Chain Management (SCM)

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October 20, 2016

Virginia Information Technologies Agency
Greg Searce, VITA Supply Chain Management (SCM)
11751 Meadowville Lane
Chester, VA 23836

Attn: Mr. Searce

Subject: SERVER, DATA CENTER, AND SECURITY SERVICES RFI-2017-14

Dear Mr. Searce:

Presidio Networked Solutions, LLC ("Presidio") or Team Presidio (Presidio, NetApp, Cisco and Partners) is pleased to respond to the Virginia Information Technologies Agency's (VITA) Request for Information (RFI) for server, data center, and security services. We believe our people, methodologies, partnerships and technical expertise offers the most comprehensive and efficient option to participate in your IT Infrastructure Services Program (ITISP).

Presidio is one of the largest solution providers in the U.S.; we combine our expertise and stability with regional support utilizing our office locations that include Virginia Beach, Richmond, Reston, and Fulton, MD, which are part of our 60 offices strategically located throughout the US. With an excess of \$3 billion in revenues and Cisco's 3rd largest partner, we have over 1500 engineers and 2700 employees.

Our engineers maintain some of the highest certifications available, and we continue to invest in our people to stay ahead of OEM requirements. We are strategically aligned with core manufacturers and positioned to combine local and U.S. resources to give VITA the solution that will meet VITA's objectives. Additionally, Presidio has garnered relationships with SWaM business partners in the Commonwealth and are committed to partner with SWaM businesses in Virginia to assist with meeting SWaM goals.

Presidio's is positioned to provide these services to VITA not only with our partners, but also because Presidio has sound business offerings that already include:





Presidio's is positioned to provide these services to VITA not only with our partners, but also because Presidio has sound business offerings that already include:

- Managed Services and Security
 - Monitoring
 - Correlation
 - Data Archival
 - Reporting
 - Forensics
 - SIEM
 - Risk Assessments and Compliance
 - Security Monitoring Tools
- Data Center – Computer and Storage
- Infrastructure
 - Core Network and Wireless
- Cloud Solutions/Capacity on Demand

With kind regards and very respectfully,

Monica Curry
Account Manager

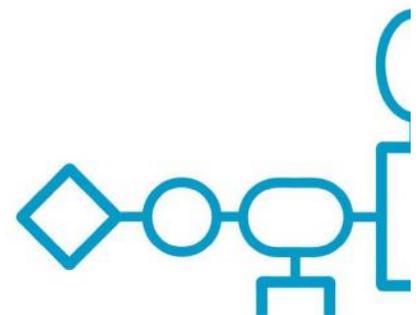


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1 Introduction

The intent of this Request for Information (RFI) is solely to gather information; it is not a formal procurement. Responding to the RFI is not a pre-requisite to submitting a proposal for any subsequent procurement. Respondents should not provide any confidential or proprietary information. Ownership of all data, materials, and documentation originated and prepared for VITA pursuant to the RFI shall rest exclusively with VITA. All information provided to VITA as part of this RFI will not be publicly disclosed, but shall be subject to public inspection in accordance with the §2.2-4342 of the *Virginia Public Procurement Act and the Virginia Freedom of Information Act*.

1.1 IT Infrastructure Services Program (ITISP) Overview

This procurement event is a component in VITA's overall strategy to implement a new IT Infrastructure Services Program (ITISP). This program will position VITA to fulfill its vision to "deliver agile technology services at the speed of business" by better balancing the needs of the individual agencies and the enterprise in a multisupplier ecosystem. The ITISP is intended to accomplish the following:

- **Maintain and improve service quality.**
 - Develop the capability to address evolving agency needs and create opportunities to improve service performance without degrading service reliability, security, and quality.
- **Ensure cost competitiveness – both now and in the future.**
 - Structure service offerings so they can be more easily compared to market services at market rates; offer a menu of service options to customers.
- **Create a platform view of service delivery that is highly visible and accountable.**
 - Provide for Enterprise and Agency visibility of consumption, cost, performance, and the responsiveness of suppliers. Establish a governance structure and forums to promote stakeholder engagement and improve the balance of agencies and enterprise needs.

Procurement of new services that will transition the Commonwealth from a single supplier model to an integrated multisupplier model is occurring over three waves. VITA has begun implementing Wave 1 of this transition by awarding a contract for Messaging services in July 2016 and a contract for IBM Mainframe services in September 2016. Wave 2 of this transition begins with this Request for Proposal ("RFP") soliciting proposals for the services of a multisourcing service integrator (MSI). That procurement was released on September 29, 2016 under RFP# 2017-03. The Wave 2 procurements are also intended to include services for Server, Storage, Data Center LAN, Data Center Facilities, and Managed Security Services (abbreviated as "Server, DC, and Security").

Respondents to this RFI are encouraged to review the publicly available RFP# 2017-03 documents for additional context. Note also that there will be a Pre-Proposal Web Conference for the MSI RFP, scheduled for Tuesday, October 4th at 2 pm. Information to register for the conference is indicated in the RFP Instructions for RFP# 2017-03.

1.2 RFI Purpose

VITA has decided to accelerate its MSI implementation, such that the contract for RFP# 2017-03 is awarded while the other Wave 2 procurements are still underway. The initial focus on the MSI RFP allows additional time at the front-end of the timeline to gather further market research for Server, DC, and Security via this RFI. This RFI will allow VITA to improve the quality of the resultant RFP or RFPs to be released around the end of 2016.

Currently, VITA's Wave 2 internal RFP teams are structured around two separate potential RFPs: 1.) Server, Storage and Data Center Services and 2.) Managed Security Services. However, VITA is

interested in identifying the most efficient demarcation or bundling of these services between RFPs. For example, perhaps it would be more efficient to separate the Data Center facilities from the other Server services; or perhaps it would be better to include some or all of the Security services with the Server RFP. VITA anticipates resolving these decisions, and other questions as detailed in the Section 5 (Questions) below, in part by considering feedback obtained from marketplace participants via this RFI.

The Commonwealth has the following goals for the procurements:

Server, Storage, and Data Center Services

- Assume all existing Services for Server, Storage, Data Center LAN, and Centralized Data Center facility currently provided to the Commonwealth via the Comprehensive Infrastructure Agreement (CIA) with Northrop Grumman.
- Transition to the next generation of delivery for Server, Storage, and Data Center services to VITA and Customers, taking advantage of the ever-changing technology landscape while decreasing costs to VITA and Customers.
- Provide compute, storage, and Data Center LAN services that are flexible, rapidly provisioned, cost effective, transparent, and elastic to meet VITA and Customer needs while preserving enterprise requirements such as security and compliance management.

Managed Security Services

- Replace the existing security services included within the Comprehensive Infrastructure Agreement (CIA) with Northrop Grumman.
- Support VITA’s Commonwealth Security and Risk Management (CSRM) directorate by acting as its operational “hands and feet”:
 - Advising on risks and standards development
 - Assessing vulnerabilities and compliance (suppliers and agencies)
 - Provide security monitoring and integration tools across the environment
 - Respond to and address security risks and incidents
 - Provide tools and technologies to protect the environment from compromise
 - Provide security services that are adjustable to meet compliance needs of the Customer and adaptable to advancements in both security and technology industries
 - Establish, implement and maintain a secure enterprise information technology environment ensuring the confidentiality, integrity and availability of critical Commonwealth information and systems
 - Provide VITA and its Customers with access to their data and metadata, in real-time

2 Submission Logistics and Contact Information

Issue Date:	September 29, 2016
Due Date / Time:	October 21, 2016 at 3:00 pm EST
Response Delivery Method:	E-mail attachment or CD sent to Single Point of Contact. Note: e-mail must be received by the due date and time; CD

must be post-marked by the due date, but can be received later. E-mail attachments must be limited to 10 MB.

Single Point of Contact (SPOC):	Greg Searce
Telephone:	(804) 416-6166
E-mail Address:	gregory.searce@vita.virginia.gov
Mailing Address:	11751 Meadowville Lane, Chester, VA 23836
Pricing:	No pricing information should be submitted
Document Format:	Return this document, having populated Section 4 (Respondent Contact Information), Section 5 (Questions) below, and Section 6 (Feedback Regarding RFI Documents)
RFI Questions and Answers:	Suppliers may submit questions regarding this RFI at any time via e-mail to the SPOC.

3 Overview of RFI Documents

Within this RFI, VITA has chosen to release the following documents, which are drafts of some key documents anticipated for release in a final RFP or RFPs.

- Exhibit 2.1-a: Server, Storage, Data Center LAN Services
- Exhibit 2.1-b: Data Center Facilities Services
- Exhibit 2.1-c: Managed Security Services
- Exhibit 2.2: Cross-Functional Services
- Exhibit 3.1-a: Server, Storage, Data Center LAN, and Data Center Facilities SLA Matrix
- Exhibit 3.1-b: Managed Security SLA Matrix
- Exhibit 3.2-a: Server, Storage, Data Center LAN, and Data Center Facilities SLA Descriptions
- Exhibit 3.2-b: Managed Security SLA Descriptions
- Exhibit 4: Pricing and Financial Provisions
- Exhibit 4.1-a: Server, Storage, Data Center LAN, and Data Center Facilities Pricing and Volumes Matrix
- Exhibit 4.1-b: Managed Security Pricing and Volumes Matrix
- Exhibit 4.2-a: Server, Storage, Data Center LAN, and Data Center Facilities RU Definitions
- Exhibit 4.2-b: Managed Security RU Definitions
- Exhibit 4.4: Form of Invoice

4 Respondent Contact Information

Please provide your contact information in the box below.

Contact Information	Enter your response here, enlarging the box as needed
Company Name	Presidio Networked Solutions LLC
Company Mailing Address	1801 Bayberry Ct Suite 103 Richmond, VA 23226
Company Website Address	http://www.presidio.com/
Name of Contact Person	Monica Curry – Account Manager
Contact Person E-mail Address	mcurry@presidio.com
Contact Person Telephone #	Phone: 804-767-3274 Cell: 757-237-9645

5 Questions

Please use the table to respond to the Commonwealth's questions.

Ref #	Category	Question	Supplier Response
A. Server/Storage Services			
Q1.	Server/Storage	The Commonwealth has upwards of 10 non-centralized Data Centers in Agency-operated buildings, primarily in the metro Richmond area. What are examples of Suppliers' best practices in managing the Servers, Storage, Firewalls, and Data Center LANs in non-centralized (Agency) facilities?	<p>Team Presidio (Presidio, Net App, Cisco, and Partners) recommend managing all equipment using a single data collection appliance (DCA) deployed within the VITA primary data center. As long as each of the non-centralized data centers are "visible" over the Commonwealth's primary network and our DCA can see or monitor the equipment (servers, storage, backup devices) in those non-centralized data centers, and we can manage them remotely. This approach is based on our best practices vs. deploying a DCA at each non-centralized data center.</p> <p>Each Data Center will require some hands-on interaction, but the vast majority would be done remotely. Ideally, the NOC would be able to move the workload across networks in response to demand, security incidents, and to optimize the use of the available compute and storage resources.</p> <p>In addition, we recommend the implementation of the following best practices:</p> <ul style="list-style-type: none"> • Centralized Governance to manage consistently across data centers • Implementation of automated provisioning, monitoring, back-ups, and performance management tools • Implementation of compliance management & auditing • Benchmarking • Streamlined Change Management • Implementation of a centralized NOC/SOC to manage <p>These support the four critical objectives of a high-performance data center design: Security, Availability, Scalability, and Manageability.</p>

Ref #	Category	Question	Supplier Response
Q2.	Server/Storage	What does the Supplier recommend for the length of the contract for Server, Storage, and Data Center Services? Please describe benefits and trade-offs.	<p>Team Presidio recommends at a minimum, a contract period of seven years with five – one-year renewals. This term would coincide with the technology refresh cycle of most hardware and typical end of life considerations.</p> <p>Benefits: The initial seven-year contract would allow ample time for the adoption of current technologies that will bring benefits to the environment, cost-savings and consolidation Additionally; refreshes occur prior to the 7 years.</p> <p>Trade-offs: Shorter term offers provider flexibility; however, longer term provides lower Capex. The initial contract will partially be consumed by the transition period, and a shorter contract would not allow for true stability. A longer term provides greater stability to migrate services, which yields a more efficient model.</p>
Q3.	Data Center	What do you recommend for the length of the contract for the Data Center Facility for this type of environment?	<p>Team Presidio recommends at a minimum, a contract period of seven years with five – one-year renewals. This term would coincide with the technology refresh cycle of most hardware and typical end of life considerations.</p> <p>Benefits: This contract is billing as a service; the Data Center is required to house the equipment, and it would be difficult to separate the Data Center from the service provider. Combining the services is a more streamlined and efficient approach.</p> <p>Trade-offs: Shorter term offers provider flexibility; however, longer term provides lower Capex. The initial contract will partially be consumed by the transition period, and a shorter contract would not allow for true stability. Longer term provides</p>

Ref #	Category	Question	Supplier Response
			greater stability to migrate services, which yields a more efficient model. Breaking out the Data Center would add complexity to the billing.
Q4.	Server/Storage	What does the Supplier recommend for technology refresh rate for the different types of Devices in VITA's environment? Is there an impact on the length of the services contract?	Team Presidio recommends a 3 to 5-year refresh cycle for technology. Depending on the length of the contract and renewal periods, this could become costly and complex. The refresh cycle is dependent on the length of the contract.
Q5.	Server/Storage	The Commonwealth is interested in a separate hardware charge in the Server RUs to account for the initial capital outlay for physical servers. Is there a better way to represent the cost differences and hardware refresh cycle in the Server RU structure?	<p>Team Presidio can provide separate hardware charges in the Server RUs to account for the initial capital outlay for physical servers and storage. Presidio through our wholly owned subsidiary Presidio Technology Capital, can structure payments on delivered services and equipment as it installed, or as milestones are requested such as monthly, quarterly, or annually. Presidio's processes allow for tailored solutions per the Commonwealth RUs including invoice detail, consumption billing, and implement of your coding requirements.</p> <p>There are options to consider.</p> <p>Servers: Server RU's, for example, are another way to measure a server, as blade servers and virtualization start to dominate, RU's are not the only factor to consider. One thing to consider is to measure the amount of virtual CPUs, memory, and storage consumed by each application, using this as a basis for recovering costs.</p> <p>Storage: From a storage perspective, NetApp has a long history of providing customers a choice in how they acquire NetApp's leading-edge technology. To address the growing</p>

Ref #	Category	Question	Supplier Response
			<p>demand for cloud-based pricing, once such program our partner NetApp offers enables customers to pay for actual use of infrastructure. This program is a simple, agile, cost-effective program that provides the flexibility of an on-premises storage solution with a consumption-based billing model to easily scale storage to keep pace with growing data volumes. Team Presidio could offer this option, and it includes all the data storage benefits that the Commonwealth has come to expect from NetApp. It will allow the Commonwealth to:</p> <ul style="list-style-type: none"> • Scale to meet changing business demands in a timely fashion • Insert newer technology with limited budget while avoiding complex procurement processes • Reduce asset base in order to improve return on assets <p>Usage-Based Consumption Program The referenced program is an on-premises consumption program for infrastructure by NetApp and facilitated by Team Presidio. the Commonwealth will use and pay for resources on a monthly basis, consistent with selected service levels to meet specific business requirements:</p> <ul style="list-style-type: none"> • Pay for actual usage • Match expense to consumption • Eliminate upfront investment • Simplify procurement • Buy based on desired business outcomes versus complicated configurations <p>Based on the selected service levels, Team Presidio defines, installs, and implements the configuration at the customer location that best meets service-level objectives. NetApp then monitors, measures, and provides reports that document actual usage</p>

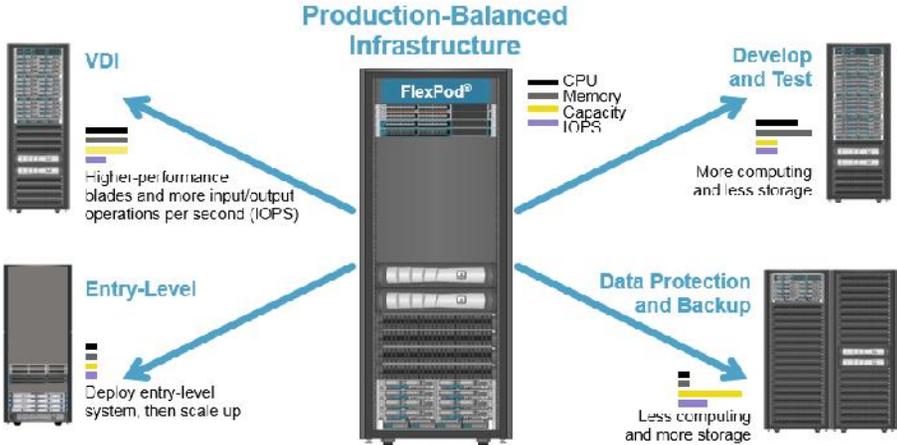
Ref #	Category	Question	Supplier Response
Q6.	Server/Storage	<p>The Commonwealth is proposing tiering of services for Server and Storage in an attempt to align costs with availability and performance. Based on your experience, do these tiers of service have any challenges in developing a solution? Do you have experience with these service tiering model? Do you have any recommendations or enhancements for the Commonwealth to consider?</p>	<p>Team Presidio is experienced in providing a tiered services structure. Tiered services present several challenges to enterprises considering their implementation. These include but are not limited to:</p> <ul style="list-style-type: none"> • Price and Performance Trade-offs • Number of tiers required • Resilience considerations • Data access trade-offs • Other considerations (e.g. persistence, access methods, data endurance) <p>Our Capacity on Demand solution leverages the private or public cloud while moving to a variable cost model. This would give the Commonwealth the ability to expand Capacity-on-Demand. The benefits include the ease of acquiring capacity as needed and paying only for consumed resources.</p> <p>Understanding the challenges of public clouds, Presidio created the Capacity-On-Demand Model to address the unique requirements of each business. Our practical blueprint for the cloud delivers end-user experiences focused on efficiency, performance and ease-of-use.</p> <p>The Capacity-On-Demand consumption model features all the benefits of the public cloud, but in a private, single-tenant environment with a capacity-on-demand configuration that’s customized to your environment:</p> <ul style="list-style-type: none"> • Provides the freedom to “pay-as-you-go” based only on consumed IT resources.

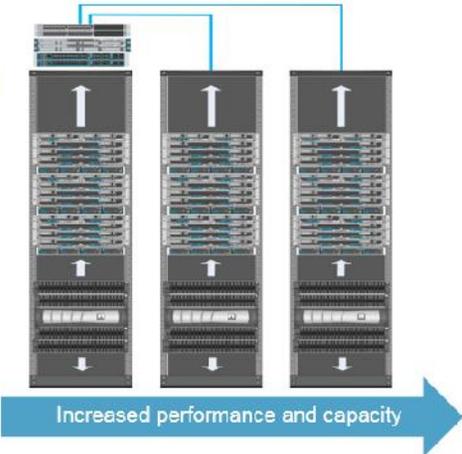
Ref #	Category	Question	Supplier Response
			<ul style="list-style-type: none"> • Includes monitoring of your environment to predict when compute and storage resources will reach trigger events. • Features access to additional assets that are always readily available and deployed well in advance of when you actually need them. <p>Presidio takes full ownership of both the professional and managed service requirements of your Capacity-On-Demand solution. We also assume all of the capital and financial risks—you pay only for the capacity as and when you consume IT resources.</p> <p>The tiers of service would flow into the offering provided by Team Presidio and would be managed wholly with the additional services.</p> <p><u>Recommendations</u></p> <p>Team Presidio recommends the Commonwealth analyze existing application workloads for realistic measurements to be the baseline for moving forward.</p> <p>While every customer environment is different, the first step in the journey of becoming a storage service provider for the business is to define a service metric. If we examine what applications consume and what storage systems deliver, the answer becomes obvious. One such storage resource management tool, NetApp’s OnCommand Insight, is a highly recommended, agentless tool that can be utilized to examine your heterogeneous infrastructure.</p> <p>OnCommand Insight provides a view of performance metrics across the domain, including application performance, datastore performance, virtual machine performance, and storage infrastructure performance. It analyzes tier assignments and enables load-balancing of an organization’s entire application</p>

Ref #	Category	Question	Supplier Response
			<p>portfolio across all of the endpoints of the Data Fabric. It also improves application performance and boosts efficiency levels of existing storage resources so that IT administrators manage storage as an end-to-end service and to integrate storage into the entire IT service delivery chain.</p> <p>A measurement that will assist the Commonwealth in defining/aligning its service level tiers is IOPS per Terabyte or Input-Output Operations Per Second Per Terabyte that is an IO Density metric. IO Density is simply how many Input-Output Operations per second applications are asking from a given capacity of storage. Every application tends to have an IO density that it needs to be responsive to its users. With an IO Density report, we identify the storage service levels that applications need, and we can move volumes to those service levels to save cost and improve performance.</p> <p>Just like a car needs a throttle, every storage system needs an IO throttle to limit the cost to serve applications. Without a QoS limit, storage systems will deliver unpredictable performance to applications and unpredictable cost to the business. Until networks implemented QoS limits, they were unpredictable and expensive. The following table is a reference of how service levels can be defined based upon an IO density report.</p>

Ref #	Category	Question	Supplier Response																								
			<div data-bbox="932 363 1900 667" data-label="Table"> <table border="1"> <thead> <tr> <th colspan="4">Application-Aligned Storage Service Levels</th> </tr> <tr> <th>Service Level</th> <th>Bronze 1.0</th> <th>Silver 1.0</th> <th>Gold 1.0</th> </tr> </thead> <tbody> <tr> <td>Workload Type</td> <td>Email, web, file shares, backup</td> <td>Database & virtualized applications</td> <td>Latency-sensitive applications</td> </tr> <tr> <td>Target IOPS/TB provisioned*</td> <td>128</td> <td>1,536</td> <td>6,144</td> </tr> <tr> <td>QoS Limit in IOPS/TB</td> <td>512</td> <td>3,072</td> <td>12,288</td> </tr> <tr> <td>Target Latency (ms)</td> <td>17</td> <td>2</td> <td>1</td> </tr> </tbody> </table> <p>Flash-Accelerated, SAN and NAS, High Availability and Durability, Non-Disruptive Movement Between Service Levels</p> </div> <p data-bbox="940 683 1451 699">* Minimum 30% Random Read; 32K Block, Recovery Point Objective not less than 4 hours</p> <p data-bbox="1150 760 1612 792">Exhibit 1. Storage Service Levels</p> <p data-bbox="869 802 1900 899">The Target IOPS/TB row is an expectation for the minimum performance of the service level, achievable even in a fail-over situation, within a set of conditions, such as a read: write ratio.</p> <p data-bbox="869 943 1900 1040">The QoS limit in IOPS/TB is the maximum speed of each service level. The values are expressed so that they can easily be divided by 1024 to derive IOPS per GB, as some organizations prefer.</p>	Application-Aligned Storage Service Levels				Service Level	Bronze 1.0	Silver 1.0	Gold 1.0	Workload Type	Email, web, file shares, backup	Database & virtualized applications	Latency-sensitive applications	Target IOPS/TB provisioned*	128	1,536	6,144	QoS Limit in IOPS/TB	512	3,072	12,288	Target Latency (ms)	17	2	1
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Q7.	Server/Storage	The Commonwealth currently spreads costs across a very simple RU model. Do you have an enhanced RU model that could offer a larger variety of services while minimizing the RUs and their complexity?	<p data-bbox="869 1052 1879 1295">Team Presidio is positioned to offer the Commonwealth the RU model that has been laid out in section 04.1-a through our wholly owned subsidiary Presidio Technology Capital, we can structure payments on delivered services and equipment as it installed, or as milestones are requested such as monthly, quarterly, or annually, Presidio's processes allow for tailored solutions per the Commonwealth's RUs. Including invoice details consumption billing and implement of your coding requirements.</p> <p data-bbox="869 1333 1094 1365"><u>Additional Options</u></p> <p data-bbox="869 1370 1801 1398">There are \$/TB consumption models that offer monthly payments based upon</p>																								

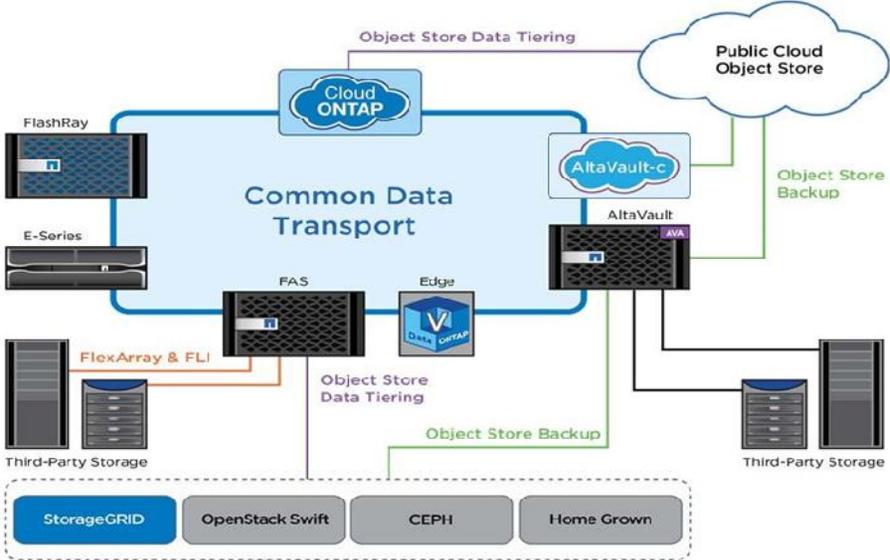
Ref #	Category	Question	Supplier Response
			<p>capacity and software usage. While this model may not entirely apply here, there are additional options using a converged infrastructure solution that offers predictable and flexible solutions that can easily scale in a prescribed manner.</p> <p>Operational efficiencies result from choosing a standard deployment chunk for infrastructure and using it in a repeated fashion to scale out to meet the needs of the business.</p> <p>Many organizations perform the following steps when servicing a new application or requirement:</p> <ol style="list-style-type: none"> 1. Collect detailed requirements. 2. Architect and size: Work with the vendors to architect and size the system. Depending on the number of applications and the number of vendors involved, the sizing and architecting phase can take many weeks and often months. 3. Data Center planning: Work with the data center team to negotiate power, floor space, and cooling requirements for the new system. 4. Procure equipment: This phase involves many weeks of obtaining quotes, ordering, and receiving the new gear. The time it takes to deal with a large organization, plus additional shipping times can easily total six weeks. 5. Detailed design: This phase involves working out the exact configuration for compute configuration, network connectivity, storage layout, security, and isolation. 6. Deploy: Configure the equipment for use. 7. Test: Create and run a test plan to make sure that the equipment is correctly installed and meets the original requirements. <p>NetApp has a converged infrastructure referred to as a FlexPod. The following solution components are critical building blocks in the FlexPod architecture:</p> <ul style="list-style-type: none"> • Cisco Unified Computing System™ and Cisco Nexus® family of switches • NetApp FAS/All-Flash FAS storage and OnCommand Software

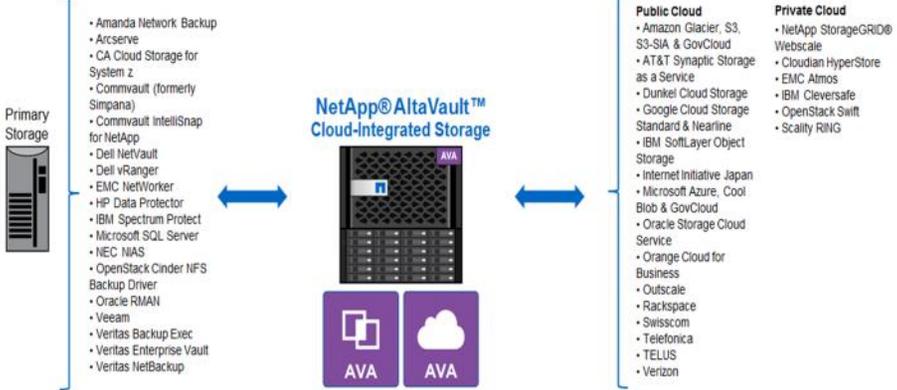
Ref #	Category	Question	Supplier Response
			<p style="text-align: center;">Management Suite</p> <p>FlexPod configurations are delivered as a complete data center in a one-rack cabinet, ready to be deployed. You can accelerate transformation from traditional silos to a virtualized, shared environment with standardized and scalable building blocks that leverage a next-generation data center solution from Cisco, NetApp, and leading OS and hypervisor partners.</p> <p>FlexPod is not a fixed configuration. It provides an excellent starting point as shared infrastructure for organizations that want to run mixed workloads. This flexible configuration allows administrators to “pick their own starting point.” If the focus is virtual desktop infrastructure or VDI, the infrastructure requirements might be different from those for a develop and test environment.</p> <div style="text-align: center;"> <h3>Optimize for Any Workload</h3>  <p>VDI Higher-performance blades and more input/output operations per second (IOPS)</p> <p>Production-Balanced Infrastructure</p> <p>Develop and Test More computing and less storage</p> <p>Entry-Level Deploy entry-level system, then scale up</p> <p>Data Protection and Backup Less computing and more storage</p> <p>Legend: CPU (black), Memory (grey), Capacity (yellow), IOPS (purple)</p> </div> <p style="text-align: center;">Exhibit 2. Workload Optimization</p>

Ref #	Category	Question	Supplier Response
			<p>By using FlexPod, many of these phases are compressed or removed altogether. For example, the architecture, design, deployment, and test phases are all substantially compressed. Many organizations do not know what future demands will be placed on IT. By using (preprovisioned) FlexPod as a pool of infrastructure, the compute, network, and storage resources are on the floor already. Therefore, it is a very rapid process to meet the business needs and preprovisioning to provide agility demanded by the business.</p> <p>Scale Out with FlexPod Repeatable, Consistent Deployments</p> <p>Scale out with standard and proven configurations</p> <ul style="list-style-type: none"> • Predictable and highly efficient • Manage pools of resources, not individual systems • Easily scale vertically or horizontally  <p>Exhibit 3. FlexPods</p> <p>FlexPod is the leading Converged Infrastructure through a partnership with Cisco. FlexPod®, a fully tested, cost-effective data center platform, supports both virtualized and non-virtualized resources. FlexPod offers over 100 validated architectures and have over 7,000 customers running FlexPod. It can be easily implemented and managed within existing infrastructures while scaling non-disruptively to meet future cloud computing objectives.</p>

Ref #	Category	Question	Supplier Response
Q8.	Server/Storage	The Commonwealth is including Bronze thru Platinum service levels for Server as examples of service categories. What would be required to implement this model in the Commonwealth?	<p>Team Presidio agrees with the direction The Commonwealth is proceeding by aligning costs with availability and performance. A requirement to implement service levels would be to obtain a clear picture of your heterogeneous environment to fully understand the performance of existing systems, which applications are aligned to which types of resources and what performance issues exist.</p> <p>The recommendation to the Commonwealth is to analyze existing application workloads for realistic measurements to be the baseline for moving forward.</p> <p>While every customer environment is different, the first step in the journey of becoming a service provider for the business is to define a service metric. If we examine what applications consume and what compute and storage systems deliver, the answer becomes obvious. One such resource management tool, NetApp's OnCommand Insight, is a highly recommended, agentless tool that can be utilized to examine your heterogeneous infrastructure.</p>
Q9.	Server/Storage	Do you see a better way to bundle or split the services we are requesting, in order to more effectively integrate with other towers (including MSI), and obtain more flexibility in the Commonwealth's IT environment while maintaining appropriate Governance and security?	<p>Team Presidio recommends keeping Data Center, Facility, Compute and Storage as one procurement and Managed Security Services as a separate procurement.</p> <p>Managed Security Services should stand alone and provide support across all towers. Sectioning off the Data Center Facility would over complicate the management and billing of the Solution as a Service.</p>
Q10.	Server/Storage	Are their new Storage offerings, like Object-Based Storage or predictive storage,	There are many new storage offerings that should be included in the Commonwealth environment to enhance services such as object-based storage and both virtual and

Ref #	Category	Question	Supplier Response
		<p>that the Commonwealth should include in storage or enhanced services? How do you offer and charge for virtual storage?</p>	<p>physical cloud backup appliances.</p> <p>Object-based storage solutions should provide intelligent policy-driven global data management. Object-based storage solutions simplify the task of managing petabytes of unstructured data and billions of objects globally, by providing a high available, durable distributed storage architecture, and sophisticated data management features. Object-based storage should be available as an appliance and software-defined storage solution.</p> <p>StorageGRID enables ubiquitous data access by providing a global object namespace formed by a distributed “grid” of storage nodes, upon which multiple storage tenants can be created, and multiple protocols (S3 API, Swift API, CDMI, SMB, NFS) can be used to service both cloud and enterprise unstructured data applications.</p> <p>Object-based storage should offer software-defined object storage, which may be mixed and matched into a single cluster. Depending on how it is used, object-based storage becomes an integrated component of the data fabric, a standalone object fabric, or both. It is an integrated part of the Data Fabric that serves as a target for storage array object store tiered data, SolidFire backups and AltaVault backups.</p> <p>The following is an example of where Object-based storage and the cloud backup appliance (AltaVault) reside within the NetApp data fabric.</p>

Ref #	Category	Question	Supplier Response
			 <p style="text-align: center;">Exhibit 4. Backing Up to Cloud</p> <p>A cloud backup appliance backs up data to any cloud and supports a wide variety of backup software. It is a modern day replacement for a tape that provides the economic and geolocation advantages of cloud implementations. NetApp's cloud backup appliance is named AltaVault. The following diagram shows the backup software and clouds that AltaVault integrates with.</p>

Ref #	Category	Question	Supplier Response
			 <p>The diagram illustrates the integration of NetApp AltaVault with existing storage and cloud services. On the left, a server rack icon labeled 'Primary Storage' is connected via a double-headed arrow to a central server rack icon labeled 'NetApp® AltaVault™ Cloud-Integrated Storage'. This central unit is further connected via another double-headed arrow to a list of cloud services on the right, categorized into 'Public Cloud' and 'Private Cloud'. Below the central unit are two icons labeled 'AVA' (AltaVault Architecture).</p> <ul style="list-style-type: none"> Primary Storage: <ul style="list-style-type: none"> Amanda Network Backup Arcserve CA Cloud Storage for System z Commvault (formerly Simpana) Commvault IntelliSnap for NetApp Dell NetVault Dell vRanger EMC NetWorker HP Data Protector IBM Spectrum Protect Microsoft SQL Server NEC NIAS OpenStack Cinder NFS Backup Driver Oracle RMAN Veeam Veritas Backup Exec Veritas Enterprise Vault Veritas NetBackup Public Cloud: <ul style="list-style-type: none"> Amazon Glacier, S3, S3-SIA & GovCloud AT&T Synaptic Storage as a Service Dunkel Cloud Storage Google Cloud Storage Standard & Nearline IBM SoftLayer Object Storage Internet Initiative Japan Microsoft Azure, Cool Blob & GovCloud Oracle Storage Cloud Service Orange Cloud for Business Outscale Rackspace Swisscom Telefonica TELUS Verizon Private Cloud: <ul style="list-style-type: none"> NetApp StorageGRID® Webscale Cloudian HyperStore EMC Atmos IBM Cleversafe OpenStack Swift Scality RING <p>AltaVault integrates with existing storage and software to securely send data to any cloud.</p> <p>Exhibit 5. Object Store Integration</p> <p>The data fabric supports multiple use cases for object stores, including a target for AltaVault backups, direct volume backup/restore, and object store data tiering. For these use cases, the cloud backup appliance manages the data stored in the repository. The implementation and configuration of the repository itself are flexible. For on-premises deployments, the software that implements the object protocol can be object-based storage or open-source solutions such as OpenStack Swift and CEPH. The back-end physical storage for the repository can be a NetApp storage array or any third-party storage server.</p> <p>Software-defined scalable storage</p> <p>Software-defined scalable storage software architecture should be offered and can be deployed on your choice of commodity servers, and disk media (HDD or SSD). NetApp’s ONTAP Select is a software-defined solution that offers robust enterprise storage services that are deployed on the Commonwealth’s choice of commodity</p>

Ref #	Category	Question	Supplier Response
			<p>hardware and hypervisor. It combines the best of the cloud for agility and for granular capacity scaling with the flexibility, resilience, and locality of on-premises storage. ONTAP Select can help the Commonwealth:</p> <ul style="list-style-type: none"> • Deploy NetApp ONTAP in various ways • Increase productivity without increasing cost • Provide enterprise data protection and efficiency • Enable a one-box branch office data center <p>In today’s IT environment, customers need the flexibility and efficiency that a cloud environment provides. For fast deployment of IT resources or for applications with varying usage needs, the cloud provides a level of flexibility unmatched by any on-premises solution. This allows the Commonwealth to use what they need when they need it. This has become a go-to deployment model for applications that are either spun up or spun down on demand to applications to new applications that do not yet have a clear, steady state operation. However, when it comes to data, it is not this straightforward. Because data is difficult to pick up and move to a new location, there needs to be a simple, controlled solution that enables IT professionals to manage their data with the same functionality that their own private environments offer.</p> <p>Another example of software-defined storage is NetApp ONTAP Cloud. ONTAP Cloud is a software-only storage appliance built on the world’s #1 branded storage operating system, NetApp ONTAP. ONTAP Cloud provides a flexible data storage solution that fits different customer storage requirements from small-capacity, low-performance applications to medium-scale applications with higher performance needs. You can build virtual storage directly in Amazon infrastructure resources using ONTAP Cloud. ONTAP Cloud is deployed and managed from OnCommand Cloud Manager as an Amazon Elastic Compute Cloud (EC2) compute instance that manages Amazon EBS storage and in Microsoft Azure.</p> <p>Simple Point-and-Click Deployment</p> <p>When the Commonwealth needs a new storage environment in the cloud, with</p>

Ref #	Category	Question	Supplier Response
			<p>OnCommand Cloud Manager, you point and click to bring up a new instance of ONTAP Cloud. Choose the amount of storage capacity and performance, and within minutes, you will have an operational ONTAP storage environment.</p> <p>Choose How to Consume Your Storage from Multiple Procurement Models</p> <p>The Commonwealth can use ONTAP Cloud either on an hourly, metered model or on a six-month subscription basis:</p> <ul style="list-style-type: none"> • Hourly/metered. Resources are procured straight from the Amazon Marketplace and billed to your Amazon account. • Subscription. You purchase the subscription from NetApp, and a key is used in Cloud Manager for each instance you deploy. <p>In each case, Cloud Manager is used to deploy the instance. Both payment models include a NetApp Software Support Plan.</p> <p>ONTAP Cloud provides a data storage solution that fits many different workload requirements from small to large capacity environments with smaller performance needs. It is deployed and managed from OnCommand Cloud Manager as a virtual machine on Amazon EC2 compute and manages Amazon EBS storage. This allows the Commonwealth to build an enterprise storage solution directly on Amazon resources.</p> <p>Building your cloud storage environment on ONTAP Cloud provides the Commonwealth enterprise-class features for your cloud storage. With ONTAP you can:</p> <ul style="list-style-type: none"> • Get non-disruptive storage operation with multi-region high-availability. • Minimize your cloud storage resources with efficiency features such as data deduplication, compression, and zero capacity snapshot copies, which can all act on your primary data. <p>Charges: Presidio can offer to bill on a consumption type basis through our Capacity-on-</p>

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			Demand Solution. See Q6.
Q11.	Server/Storage	The Commonwealth is interested in ensuring it provides optimal storage performance and availability for VITA and VITA's Customers. How do you propose to provide and measure this performance?	<p>Team Presidio recommends the use of a reporting and management tool or tools as it provides consistent insight across your data center and your clouds so you can monitor and manage a multi-tiered and multivendor storage, compute, and switching infrastructure. You can manage the IT infrastructure as an end-to-end service by integrating the entire IT service delivery chain. This is important to determine non-storage related bottlenecks that may or may not be affecting various service levels.</p> <p>An enterprise storage resource management (SRM) tool should be agentless and help you optimize your current infrastructure, allowing you to right-size operations to meet service level objectives.</p> <p>SRMs identify workloads that are suitable candidates for re-tiering and potential migrations to the cloud. Once services or applications have been migrated to the cloud, the SRM can provide validation that workloads continue to perform as expected and meet business demands. It provides visibility into the on-premises and off-premises assets so the Commonwealth can monitor and manage across compute and storage resources, regardless of geographic location and manufacturer. It maps the relationship between application, platform, infrastructure, and storage siloes and monitors the capacity and performance metrics along service levels and cost.</p> <p>With an SRM tool, the Commonwealth can manage and monitor infrastructure across a hybrid cloud environment, focusing on three key areas:</p> <ul style="list-style-type: none"> • Improving operations through simplified troubleshooting and analysis • Monitoring and promoting service quality to optimize resources and reduce Capex and Opex • Managing and analyzing costs, and creating show back and chargeback reporting <p>The SRM establishes the baseline service level performance. This helps the</p>

Ref #	Category	Question	Supplier Response
			<p>Commonwealth compare actual service-level agreements (SLAs) vs. expected SLAs. It also allows IT administrators to right-size the environment and to make informed decisions on which workloads are good candidates for hosting in an off-premises and/or cloud data center.</p> <p>The SRM also delivers consistent insight across your data center so you can monitor and manage your multivendor storage, compute, and switching infrastructure. SRM can help you optimize your current infrastructure, allowing you to right-size operations to meet business demands. It simplifies the process of determining what and when to buy. With an enterprise SRM, you can manage the IT infrastructure as an end-to-end service by integrating the resources into the company's entire IT service delivery chain.</p> <p>Implementation of an enterprise SRM will allow the Commonwealth to quickly identify misused, misaligned, or underused assets for more efficient use of your infrastructure. When integrated into your daily operations, it reduces service delivery time and yields significant operational improvements. Administrators focus less time on reactive troubleshooting and routine tasks and more time on business-critical projects.</p> <p>This tools ability to understand a host's path to storage, combined with device performance information, results in unparalleled visibility into the cost efficiency of delivering infrastructure service to an application.</p> <p>The SRM should provide a global view of your storage infrastructure so you can track your storage utilization in multiple locations simultaneously. It provides trending information that shows you how much storage capacity you have at each tier, the number of used and available switch ports, Fibre Channel bandwidth, top applications, and how much time you have until your data centers are full. With this information, you will also accurately predict how much capacity you are likely to need in the next</p>

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			<p>period. As a result, you can make more informed and timely business decisions based on real-time data, vastly simplifying capacity management. You buy what you need when you need it.</p> <p>Detailed business-level reporting gives you full cost awareness. You can immediately see how much storage, compute, or switching resources each business unit or application uses in each storage tier over a given period of time. The comprehensive information allows you to work with business units to make more intelligent decisions about how storage is being used. You will quickly identify datasets that are misplaced and reduce the amount of expensive tier 1 storage you need. You can assign a value to each tier of storage to simplify the process of charging business units for resources used.</p> <p>Quality of Service</p> <p>QoS (Quality of Service) can help the Commonwealth manage risks around meeting performance objectives. You can use Storage QoS through the data management application or the CLI to limit the throughput to workloads and to monitor workload performance. To address performance problems, you can limit workloads proactively or reactively.</p> <p>Automation</p> <p>Automation tools integrated into the SRM tool and data management tools should be able to provide a framework for implementing Service Level Objectives (SLO). Using the SLO, storage service providers can optimize utilization, performance modeling, trend analysis, and asset planning.</p>
Q12.	Server/Storag	The Commonwealth has	In almost all cases the move to the cloud is driven by the Application. The dependency

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	e	<p>traditional x86 virtual servers, but it is also interested in the capabilities of a private cloud. Could they be combined or left separate? Please describe how this could be accomplished most effectively.</p>	<p>on the hardware is somewhat inconsequential when considering a move to a cloud environment. In order to move any workloads to the cloud, an in-depth conversation and consulting effort must be initiated to determine the best fit for each application. As a best practice, an application-centric methodology is essential to determining the best use of Private, Public, Hybrid and Virtual Private Cloud systems. Most customers we have worked with have some kind of private cloud as well as a public cloud infrastructure. This leads to a Hybrid Cloud environment.</p> <p>With Team Presidio, our industry-proven approach is to perform an analysis of the services an organization wishes to place in the cloud. Our methodology reviews the disposition of the applications, data, and other factors to determine the proper landing zone. In many cases, we find that “the cloud” is not the right location based on performance, cost or lifespan. Through our analysis, we review a variety of elements which allows us different perspectives and provides us the information required to identify public, private, on-premises or off-premises locations (as all cloud providers are not created equal); as well as a recommended migration wave plan</p> <p>The Commonwealth has a variety of cloud deployment models to choose from: private cloud in the data center, public cloud offerings from service providers, and hybrid cloud that combines multiple clouds. The Commonwealth may select a combination of deployment models to define the topology and span of your data fabric.</p> <p>Data requirements differ between each cloud model, and everyone’s cloud is different—so how can data be integrated into the cloud to the Commonwealth’s specifications.</p> <p>Private clouds may reside in the Commonwealth’s own data center or be hosted in remote facilities. Products integrate data management capabilities across all commercial or open-source hypervisor and cloud orchestration frameworks. Many products can tightly integrate data management capabilities with these ecosystems.</p>

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			<p>The storage solution choices range from purpose-built to software-defined storage.</p> <p>A flexible data fabric enables customers to respond and innovate more quickly because data is free to be accessed where it is needed most. Customers can realize the full potential of their hybrid cloud and make the best decisions for their business. Over time, the Commonwealth’s data fabric will expand to cover more environments. With each new weave, the data fabric becomes more textured, more expansive, and more capable.</p> <p>To fulfill this vision, one must define the data fabric technology for hybrid cloud. Products, services, and partnerships help customers seamlessly manage their data across their diverse IT resources, spanning flash, disk, and cloud. IT has the flexibility to choose the right set of resources to meet the needs of their applications and the freedom to change them whenever they want.</p> <p>A true data fabric delivers on five major design principles:</p> <ul style="list-style-type: none"> • Control. Securely retain control and governance of data regardless of its location: on premises, near the cloud, or in the cloud. • Choice. Choose cloud, application ecosystem, delivery methods, storage systems, and deployment models, with freedom to change. • Integration. Enable the components in every layer of the architectural stack to operate as one while extracting the full value of each component. • Access. Easily get data to where applications need it, when they need it, in a way they can use it. • Consistency. Manage data across multiple environments using common tools and processes regardless of where it resides. <p>When a data fabric delivers on these principles, it enables customers to increase efficiency, improve IT responsiveness, and ultimately accelerate innovation.</p>

Ref #	Category	Question	Supplier Response
			<p>Below are some things to consider while developing the Data Fabric for the Commonwealth.</p> <p>In a hybrid cloud environment, automation and orchestration are essential elements. Workflow Automation eliminates slow, error-prone manual processes for storage management. It enables storage administrators to provision storage for fast turnkey deployments of applications including VMware®, Oracle®, Microsoft®, SAP®, Citrix, and others. It can be used to construct, customize, test, publish, and activate a broad range of storage workflows, including:</p> <ul style="list-style-type: none"> • Provisioning, migrating or decommissioning storage for databases or file systems • Setting up a new virtualization environment, including a storage switch or datastore • Setting up storage for an application as part of an end-to-end orchestration process • Setting up converged infrastructure software or virtual desktops • Performing storage cloning • Conducting centralized replication software activation <p>Improve productivity in your organization by automating repeatable manual storage management processes. Use automation to construct, customize, publish, and activate a broad range of storage workflows.</p> <p>You can:</p> <ul style="list-style-type: none"> • Provision, clone, migrate or decommission storage for databases or file systems. • Set up a new virtualization environment, including a storage switch or datastore. • Set up virtual or cloud storage for an application as part of an end-to-end orchestration process. • Set up converged infrastructure for virtual desktops.

Ref #	Category	Question	Supplier Response
			<ul style="list-style-type: none"> • Perform storage cloning. • Conduct a centralized replication software activation. • Enable self-service, storage as a service (PDF), and more with faster delivery of new standard and custom storage services. • Deploy Software Defined Storage (SDS) (PDF) for your Software-Defined Data Center (SDDC) (PDF). • Automation enables one-click automation and deployment of applications, including VMware® (PDF), Oracle®, Microsoft®, SAP®, Citrix, and others. Reduce the cost of your storage management while enabling the use of best practices. <p>Cloud storage management tools are also necessary for a hybrid cloud environment. It can simplify the installation and resource assignment of all your cloud storage instances and is the deployment environment. These tools also ease the day-to-day requirements of your cloud and private cloud environments, including configuring, provisioning, and monitoring your active virtual and hardware storage nodes.</p> <p>Cloud storage management tools integrate with your cloud environment, allowing you to insert credentials so that it gathers the required resources to meet your storage requirements. With visibility into the actual resources consumed by each instance, the Commonwealth can monitor and provides valuable cost feedback to your administrator on the cost of resources over time. This information is then used to help you decide how to best move workloads to the most cost-efficient environment.</p> <p>Key features should include:</p> <ul style="list-style-type: none"> • Simplifies configuration and deployment of software-defined storage • Offers central point of control for all cloud instances • Provides cloud resource cost monitoring • Eases license and entitlement management • Facilitates hybrid environments that include software-defined and private cloud storage <p>It is evident there are many moving parts while moving to a cloud environment.</p>

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			<p>Controlling all of these parts within an easy to use system can be incredibly cumbersome in itself. Within Presidio’s Cloud Services organization at Presidio, we have dealt with this scenario by creating a cloud integration broker. The broker provides management and administrative capabilities across the hybrid cloud landscape, from private on-premises to public off-premises environments. Having a “single pane of glass” from which to view all services, our recommended approach provides not only a consolidated view but also the capability to create new services, migrate services and workloads, as well as monitor, report and charge back if required.</p>
Q13.	Server/Storage	<p>How does Database as a Service make sense for an Enterprise like the Commonwealth? Do you have any recommendations for how to charge for enhanced Database services (i.e., Development DBA)?</p>	<p>Database as a Service (DBaaS) can be a powerful offering approach to the storage and management of structured data. DBaaS is one of a growing number of other cloud-based services. Whether it is in a Private Cloud, Public Cloud, or a Hybrid Cloud model there are some potentially very costly and potentially disastrous challenges if it does not have the proper underlying technologies.</p> <p>Benefits:</p> <p>DBaaS delivers database functionality similar to what is found in relational database management systems (RDBMSes) such as SQL Server, MySQL, and Oracle. Being cloud-based that it is not a proprietary infrastructure or proprietary cloud, DBaaS provides a flexible, scalable, on-demand platform that's oriented toward self-service and easy management, particularly in terms of provisioning a business' own environment. DBaaS products typically provide enough monitoring capabilities to track performance and usage and to alert users to potential issues. The products can also generate at least some degree of data analytics.</p> <p>Challenges:</p>

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			<p>Disadvantages to the DBaaS model include a lack of control over network performance issues, such as unacceptable latency and application failures. Some DBaaS products don't support capabilities of the typical RDBMS, such as data compression and table partitions. Hardware proprietary hardware lock-ins and proprietary clouds that make it virtually impossible to have application and data mobility and execute an effective contractually required exit strategy.</p> <p>A stove pipe-solution of any kind will work against a long term price and cost competitiveness and leave assets sitting idle and not generating usage or revenue. Before committing to DBaaS, it's essential to assess specific requirements and ensure they are satisfactorily addressed.</p> <p>Economic challenges are very significant! For every production database, there are about seven (7) other copies being used for data protection, disaster recovery, and application development. Without underlying technologies, it quickly becomes more cost effective to work outside of the Commonwealth program.</p> <p>Suggestions:</p> <p>These are the suggested underlying technologies whether in a Private Cloud, Public Cloud, a Hybrid Cloud:</p> <ul style="list-style-type: none"> • DBaaS should be hosted on non-proprietary hardware infrastructure and compatible with industry standard cloud service providers. • Space-less snapshots (a Storage Networking Industry Association term) for point-in-time-copies that are safe, secure, have no performance impact and don't incur additional fees until absolutely necessary. • Space-less clones (a Storage Networking Industry Association term) for point-in-time-clones that are safe, secure, have no performance impact

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			<p>and don't incur additional fees until absolutely necessary.</p> <ul style="list-style-type: none"> • Snapshot and clone management system to simplify backup, restore, and clone lifecycle management with application-integrated workflows. <p>Charges for the DBaaS could be billed on a monthly basis utilizing Presidio Technology Capital to structure payments and provide billing with the Commonwealth's coding requirements. Cost to consider when implementing DBaaS are:</p> <ul style="list-style-type: none"> • Service Level • Software version required • Compute, CPU, Memory Required • Database Storage • Backup Configurations <p>Presidio can offer to bill on a consumption type basis through our Capacity-on-Demand Solution. See Q6.</p>
Q14.	Server/Storage	The Commonwealth wants to provide cost effective solutions to VITA and the Agencies. What do you describe as the key cost and value drivers that would help the Commonwealth offer services that are not cost prohibitive to deliver? Do you see any requirements in the description of services in this RFI that would cost more to	<p>The key cost/value drivers for the Commonwealth center around end-user experience. Requirements must be understood, and expectations set regarding the level of services to be provided and the IT requirements necessary to achieve them. Efficiency, Experience, Cost, and Assurance are four factors that must be analyzed to ensure an alignment between user expectation and the cost to deliver the service.</p> <p>Team Presidio does not see any requirements in the description of services that would cost more to meet than the business value.</p>

Ref #	Category	Question	Supplier Response
		meet than the business value they provide?	
Q15.	Security	The Commonwealth is interested in an Enterprise Key Management System for compliance and security. How do you propose the Commonwealth request Key Management services?	We recommend that the Commonwealth include requirements in the RFP that indicate that the Commonwealth "owns" and "operates" the key management system, to include issuing keys, revoking keys, and recovering keys. Given those requirements, most providers can align to that structure. The best practices tend to suggest that this task not be outsourced/out-tasked.
Q16.	MSI	Identity and Access Management (IAM) services and the systems supporting those functions are currently split between multiple providers. How do you propose bringing these services together to provide a single integrated service?	Team Presidio would manage IAM as one provider and work with our partners to bring the management together. The partners would be selected based on the RFP requirements.
Q17.	MSI	The Commonwealth has defined the cross-functional requirements in Exhibit 2.2. Do you have any comments in the structure and handoffs identified in this document? Do you have any prior experience working with MSIs? Do you have any recommendations regarding the approach for how the MSI should interact with the other	While Team Presidio has experience with MSI's, we do not have a recommendation regarding the approach for the MSI.

Ref #	Category	Question	Supplier Response
		suppliers?	
Q18.	MSI	Do you see any benefits or challenges in requiring the Data Center facility provider to also be responsible for providing common operating monitoring groups in the same solution (e.g., CMOC, ITOC, SOC, NOC)?	<p>Team Presidio does not see any benefits to this. We recommend a cohesive contract that incorporates the Data Center Facility with the Servers/ and Storage. This would provide a full view and holistic approach giving the ability to address the entire:</p> <ul style="list-style-type: none"> • Scope • Problem • Own it • Quicker resolution.
Q19.	MSI	The Commonwealth currently has a single traditional DR solution that requires the entire backup Data Center to be failed over. There is a desire to move to a more flexible solution that allows single Agencies or even applications to be failed over individually. This process requires design, development, operations, testing, and coordination. What role should VITA's MSI should play in this effort in relation with the Server Services provider?	<p>As part of the role of a Multisourcing Service Integrator, a principle duty is to manage, administer and orchestrate overall program activities of service and solution providers to ensure that proper interlock and integration occurs. In relation to the Service Services provider, the MSI would specifically vet and validate the providers approach, methods, plans and activities; and properly align those to other work streams.</p> <p>Consideration would be placed on ensuring dependencies are mapped, and pre-requisite tasks are noted to foster higher levels of collaboration and risk reduction across program activities.</p>
Q20.	Data Center	The Commonwealth is interested in Multi-site High Availability and Disaster	Our recommendation as it relates to multi-site is a two site configuration with sufficient geographic separation. Availability/Recoverability, Survivability, and Ease of

Ref #	Category	Question	Supplier Response
		<p>Recovery Services. At a high-level, what do you recommend on the number and locations of centralized Data Centers the Commonwealth should utilize for that purpose? Any tradeoffs?</p>	<p>Use are the primary considerations in Continuity of operations planning. Implementation of a hybrid recovery architecture using on-premise and cloud solutions will be most effective. Ensuring that the geographic location of the data center with significant bandwidth availability is also a major consideration when using a public cloud as a secondary backup. Keeping the architecture as simple as possible is beneficial in managing risk and the evolution of the total solution and will also minimize costs.</p> <p>Today we see many large customers adopt a 3-site approach involving cloud services for additional DR and availability functions.</p> <p>Team Presidio’s DR expertise is relied upon by not only State governments but US Department of Defense, Intelligence and other Federal and State Agency’s for National Security and High-Site Availability. Our recommendations for separate TERTIARY POWER and COMMUNICATIONS connectivity providers, a strong survivable disaster recovery plan, and a well thought out practiced execution and commissioning schedule of practice. Understanding the Level of DR and Survivability, carefully examine/analyze the threat levels anticipated from multiple threat resources both hard, soft, analytical, and natural disasters within the scope of the DR Plan.</p>
Q21.	Migration	<p>Suppliers will be required to provide an implantation plan to specify how they will take over responsibility for the existing environment. The Commonwealth is also interested in recommendations with regard to how the</p>	<p>Team Presidio recommends an implementation plan that works with NG, but does not take over ownership of the existing environment. We would work with NG during the new implementation to transition to new environment. Developing platform and migration plan would require NG knowledge. There are many ways in which to accomplish a migration. Use of Tribal knowledge, Tools, and Consulting services in conjunction with all of these. Most likely all of these methods will be used. The extent of each will be based on the level of information available from the RFP and any other current documentation available on the infrastructure and environment variables. Movement to other platforms or even rewriting of applications to become more</p>

Ref #	Category	Question	Supplier Response
		Commonwealth could migrate or transform to new Service offerings. What do you recommend for this migration plan?	<p>“Cloud Native” may be appropriate.</p> <p>An option would be a full lifecycle management approach to security. Our process incorporates the following phases:</p> <ul style="list-style-type: none"> • Discovery – to establish a detailed understanding of the current environment, practices, issues, and risks • Transition Planning – to define the future state and the required activities and tasks necessary to migrate to that state • Deployment – Migration to the future state architecture and process set designed to minimize risk to the Commonwealth through phased implementation (e.g. Pilot, IOC, FOC) • Operations – Continual improvement and care of the solution in steady state. <p>This approach allows scaling within a department agency and provides the opportunity to set priorities across the Commonwealth for transition and implementation of the new security solution.</p>
Q22.	Enhanced Services	The Commonwealth is interested in receiving proposals to include new enhanced services, (e.g., Cloud, Analytics, Managed File Transfer) Can you recommend any other such enhanced services the Commonwealth should also consider including at the moment? How would you recommend these services be delivered?	<p>From our experience, one of the highest benefits returned to an organization investing in new services is the containerization of applications. As cloud services become more prominent, dispersion of services also occurs. This becomes problematic for organization looking to take full benefit from the cloud, as they often do not realize this benefit due to “cloud lock” where their applications (and data) are migrated to a particular cloud but then experience the same hindrance as they experienced in the legacy environment.</p> <p>Containerization provides a method to avoid this lock in to a particular cloud and allows movement across cloud platforms. During the duration of the program each application should be evaluated for “cloud rediness”. Prior to any cloud migrations, a high-level application rationalization should be implemented. This will enable a lowest hanging fruit or most desirable plan for migration. As well as the consideration and a</p>

Ref #	Category	Question	Supplier Response
			<p>plan to Migrate, Cloud enable, or Rewrite may be necessary.</p> <p>Containers</p> <p>With the availability and scale of cloud platforms, application architectures are evolving to capitalize on their advantages. Both encapsulate the functionality of a portion of the application into a component, which can be independently developed, deployed, scaled, and even replaced non-disruptively. Such components are known as containers.</p> <p>Docker abstracts container instantiation, decoupling them from the underlying operating system, helping facilitate the movement to distributed, container-based microservices. This application architecture presents new challenges for accessing persistent data from many different locations simultaneously.</p> <p>To address these challenges, NetApp provides a Docker volume plugin that allows the management and attachment of persistent storage devices to containers across multiple hosts. This removes the burden of data management from the application and simplifies microservice components while providing enterprise-class storage performance, efficiency, and flexibility. Today, the plugin supports NFS and iSCSI protocols for ONTAP systems, with support for additional platforms coming in the future.</p> <p>Other technologies gaining speed and momentum are Internet Of Things, Surveillance analytics, and Micro Services.</p> <ul style="list-style-type: none"> • IOT-enables the control, management and correlation of related objects within an environment. This is useful in Law enforcement, EMS, Education, Public works, and others having relational dependencies. • Surveillance Analytics (Big Data)- enables the correlation of the data driven by

Ref #	Category	Question	Supplier Response
			<p>IOT to be layered on top of the video and audio systems within the current State of Virginia highway Administration in way that help real time law enforcement, EMS, Public Works, and school districts to become more responsive and accurate in regard to the mission.</p> <ul style="list-style-type: none"> • Micro Services-Technology wrapped in cloud native applications to enable the elasticity and resilience of applications while in cloud environments. This technology should be part of the planning and application rationalization. <p>The Commonwealth has many options and integrations available based on technology available today and should follow industry trends to adapt to the ever changing environment. The ability to remain flexible and leading-edge is critical when selecting a vendor especially if the term of this contract is 7-12 years.</p> <p>We also would recommend enhanced services that are part of the data fabric highlighted previously and fully integrated to a holistic solution that can extend additional services, including:</p> <ul style="list-style-type: none"> • Protecting investments in existing third-party storage arrays • Bringing data fabric capabilities to commodity, DAS systems • Leveraging open-source software-defined storage offerings • Backing up to public or private cloud object stores • Integrating with object stores <p>Increasingly, IT organizations do not have specialists dedicated to managing the server, networking, or storage infrastructures. Instead, IT generalists manage the entire infrastructure. Traditional approaches of monitoring application servers, networking, and storage infrastructure, typically with different vendor-provided tools, no longer fit the new data center paradigm. To address this challenge and to enable organizations to choose from a broad range of application ecosystems and cloud service providers, the Commonwealth should look at vendors who have developed a</p>

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			<p>technology stack. The lowest layer of this technology stack includes APIs that enable automation and management integration with both third-party products and custom-built tools and workflows.</p> <p>As a result of these ecosystem integrations:</p> <ul style="list-style-type: none"> • Enterprises do not need to be specialized on any specific storage vendor. They only need to understand their ecosystem products. • Enterprises eliminate the need for homegrown tools by using tools and frameworks. • Enterprises can protect applications (including databases, SharePoint, and Exchange) without needing understanding of the data protection mechanisms of those applications. • Enterprises can tie their legacy systems into the modern infrastructure without changing processes. <p>Ecosystem Integration Layer</p> <p>Storage vendors should make significant investments to integrate innovative data management capabilities with the virtualization and cloud management tools. Vendors should contribute to OpenStack to support customers that choose to leverage its open-source management ecosystem.</p> <p>The following highlights examples of industry leading technologies and the level of integration that NetApp has available to customers such as the Commonwealth that should be considered requirements in a future RFP:</p> <p>VMware</p> <p>The NetApp strategy for ecosystem integration with VMware is to enable self-service through VM granular data management that the Commonwealth storage administrators can safely expose to VM and application owners. NetApp added</p>

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			<p>functionality such as rapid VM cloning to the native VMware vSphere user interface (UI). Today, deep integration with VMware means that the data management functionality of the Data Fabric can be seamlessly leveraged through vSphere native management APIs and UIs.</p> <p>These native integrations include:</p> <ul style="list-style-type: none"> • SnapMirror integration with VMware Site Recovery Manager for automation of DR testing and DR failover/failback scenarios • VAAI array integration with VMware vStorage APIs to enable offloading of cloning and other storage-intensive operations • VVols integration enables service-level aware provisioning and management of virtual disks and VMs and virtual disk granular data management integration between vSphere and the Data Fabric • vRealize Operations (vROps) Management Pack extends vROps with metrics and analytical views specific to NetApp for ONTAP storage systems • Qualification of NPS solutions to run attached to VMware public cloud platform, vCloud Air <p>Microsoft Windows Server and Azure Cloud Integrations</p> <p>Microsoft technologies for the private cloud are based on Microsoft Hyper-V and System Center Virtual Machine Manager (VMM). For the public cloud, the technologies are based on the Microsoft Azure cloud platform. Microsoft offers Azure Site Recovery (ASR) for hybrid cloud disaster recovery to connect multiple private and public clouds into a single IT infrastructure. ASR enables virtual machines to move between Hyper-V servers within a single site and between multiple sites in secondary private cloud data centers as well as Azure cloud data centers.</p> <p>Organizations that require replication between their private and Azure public clouds for Azure site recovery can replicate their Data Fabric SAN to NPS. NetApp</p>

Ref #	Category	Question	Supplier Response
			<p>integrations with Microsoft are enabled by the combination of protocol-level capabilities and industry-standards-based storage management integration with Microsoft System Center.</p> <p>The Microsoft System Center administrator has increased agility in the management domain.</p> <ul style="list-style-type: none"> • Automate workflows using System Center Virtual Machine Manager and System Center Orchestrator for workflow automation • Monitor server and storage availability and capacity for Microsoft Windows Server Hyper-V VMs • Isolate problems using System Center Operations Manager alerts and health explorer views • Enable high availability and load balancing of management servers with OpsMgr Management Server Resource Pool • Leverage Windows Azure Pack (WAP) to provide service provider capabilities on top of ONTAP in a private cloud architecture <p>OpenStack</p> <p>NetApp contributes to OpenStack, supporting customers in their choice to leverage an open-source management ecosystem. OpenStack is the leading open-source cloud platform, and NetApp integrates OpenStack into our Data Fabric to make deployment of cloud services simpler, faster, and more scalable. NetApp OpenStack block storage (Cinder) integrations include:</p> <ul style="list-style-type: none"> • Storage provisioning and data management. Specific NetApp drivers for ONTAP, SolidFire and E-/EF-Series systems enable NetApp storage provisioning and data management capabilities. • Storage service catalog capabilities. NetApp Cinder drivers allow IT to create a

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			<p>catalog of storage capabilities that meet diverse application and tenant needs for efficiency, performance, availability, and protection.</p> <ul style="list-style-type: none"> Enhanced persistent instance creation with copy offload. The NetApp Cinder drivers for ONTAP make use of NetApp cloning technology to quickly and efficiently create multiple virtual machines from Glance images. <p>NetApp is driving the addition of a shared file system service known as Manila, with shared file systems underpinning much of the total storage shipped worldwide.</p> <p>Cloud Manager</p> <p>OnCommand Cloud Manager simplifies the creation and management of ONTAP Cloud instances in the cloud. OnCommand Cloud Manager is the primary portal for establishing ONTAP Cloud endpoints in public clouds and managing cloud resources in the data fabric. It has simplified wizards for common workflows such as creation, resource provisioning, and replication. Hybrid clouds may be constructed by simply dragging and dropping FAS systems to ONTAP Cloud systems and establishing a SnapMirror session for data replication. In addition, OnCommand Cloud Manager exports a RESTful API set so that higher level tools can automate operations.</p> <p>Application Integration</p> <p>The NetApp SnapDrive, SnapManager, SnapCenter, and Snap Creator family of products empowers self-service data management by DBAs and SharePoint and Exchange application owners. The Commonwealth can benefit from the data management capabilities of ONTAP and the replication capabilities of the data transport to automate critical enterprise application lifecycle tasks, including:</p> <ul style="list-style-type: none"> Simplifying storage layout, planning, backup, and restore operations Reducing application server data recovery times from hours to minutes leveraging NetApp Snapshot, SnapMirror, and SnapVault technologies Providing clone lifecycle management to accelerate deployment of new

Ref #	Category	Question	Supplier Response
			<p>releases and new applications</p> <p>In addition to traditional on-premises deployment models, these application integrations support NPS and ONTAP Cloud deployment models as well as hybrid cloud solutions where the application data is transported by SnapMirror or SnapVault across sites, clouds, and deployment types. Fully integrated solutions include:</p> <ul style="list-style-type: none"> • Microsoft SQL Server • Microsoft SharePoint • Microsoft Exchange • Oracle databases • SAP systems <p>Snap Creator and SnapCenter extend these capabilities to be leveraged for additional commercial and custom databases and applications.</p> <p>Backup Management Integration</p> <p>Backup and recovery is a key use case for data transport. Many enterprises have dedicated teams and infrastructures for their enterprise backup architectures, and NetApp understands how important it is to fit in with the Commonwealth’s chosen enterprise backup management architecture.</p> <p>NetApp has partnered with most major enterprise backup management software vendors to provide integrated management of the Data Fabric:</p> <ul style="list-style-type: none"> • CommVault® software is fully integrated with NetApp Snapshot technology for primary, vault, and mirror data. It also includes deduplication-aware replication and tiering across storage and cloud repositories. Commvault software is also supported in NPS deployment configurations. NetApp also resells Commvault IntelliSnap for NetApp software which offers a more affordable way to deploy Commvault software with NetApp storage. • Veritas NetBackup integration with Replication Director enables a similar

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			<p>value proposition for NetBackup users.</p> <ul style="list-style-type: none"> • Veeam is an easy-to-use and affordable backup and Availability solution, providing fast, flexible and reliable recovery of virtualized applications and data.
Q23.	Enhanced Services	As the technology landscape changes in the Commonwealth's environment, could you describe other enhanced services that VITA and VITA Customers should consider in the future?	Along similar lines to the above question, we would recommend investment in the processes, methods, and tools required to perform application migrations to/from and within the cloud. Development Operations (DevOps) is a useful cultural adaptation which an organization can use to be more efficient in the development, introduction and movement of applications. Dev/Ops and Agile development methodologies will also enable the continuous delivery, and continuous integration (CD/CI) required for cloud-native applications. (For others, please refer to Q22.)
Q24.	Enhanced Services	What would you propose as a good business case for virtualizing the desktop (offering VDI)?	The remote workforce is the best use case for a VDI solution. The data can easily be backed up and managed within the data center. Inexpensive end points can be utilized, and security policies can be applied and managed easily by the security team through high-level encryption and 2 layer authentication methods. Lab environments for Learning/Training Systems is another good use case for VDI. Enabling easy access to environments and managing student data and educational materials easier
Q25.	Data Center LAN	What do you recommend as the best demarcation point between the Data Center LAN and the Network or WAN? The Commonwealth wants to make the cleanest scope separation for a future WAN Network RFP.	<p>The demarcation point should reside at the defined security perimeter boundary between the Data Center LAN and the outside WAN/Networks. No traffic should transfer through the boundary without being authorized and screened by the appropriate security appliances at the boundary.</p> <p>A demarcation panel at the top of one or more racks used to deliver circuits or connect with other services in the data center. This demarcation gives a clear point to provide Customer Facility Assignment to deliver or disconnect circuits. It also allows for a better inventory of circuits and cross-connects.</p>

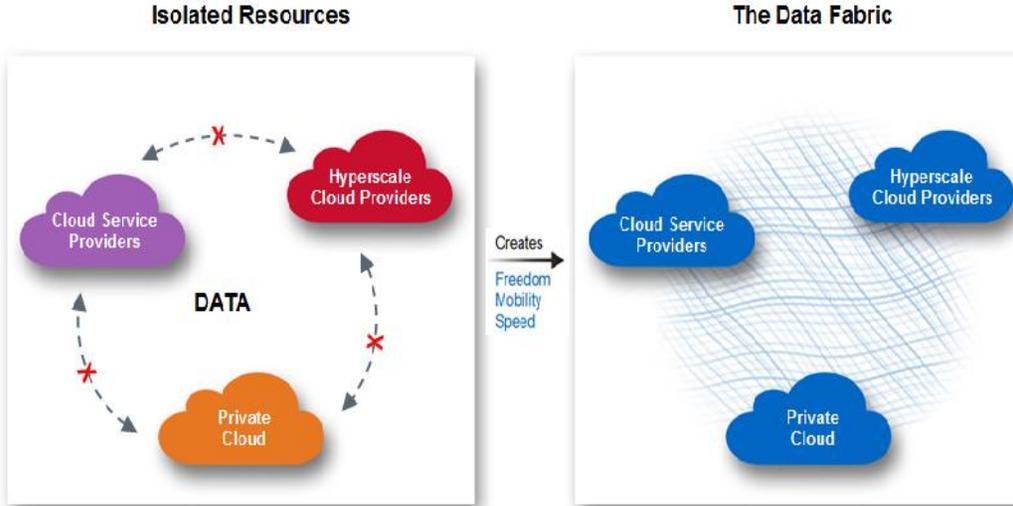
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			<p>Leveraging your edge rack as a “meet me” place for digital business. Invite key partners into your edge node in order to cross-connect (or agree on establishing a mutually beneficial edge location). The benefits of your edge node compound beyond cloud ecosystem access when digital business ecosystem partners are also in the same edge node location. Establishing direct secure connections (intra-colocation) as needed to extend a private LAN to business partners.</p> <p>Your digital exchange runs on secure dedicated low-latency bandwidth removing the barriers to expanding the ecosystem and seize business opportunities. This can be done in any and/or all of the global metros and markets you and your business partners have an edge presence in.</p>
Q26.	Data Center LAN	In the current RFI, the Commonwealth has bundled Data Center LAN services (e.g., switching, routing, load balancing and firewall) with Server and Storage services. Do you find any challenges, issues, or concerns with this approach and why? Any recommendations?	<p>Team Presidio agrees with the approach. This is true because access to/from the server and storage elements are controlled by the LAN services. Utilizing the Cisco Datacenter switching portfolio would allow for tight integration of server/storage/switching with centralized management including security services.</p> <p>If the security piece is awarded separate, then it may be possible to pull the firewall services into that management realm.</p>
Q27.	Data Center LAN	The Commonwealth did not bundle Data Center LAN services (e.g., switching, routing, load balancing and firewall) with the Data Center Facility services (e.g., HVAC, power, raised floor). Do you	Team Presidio does not agree with this approach. Team Presidio’s approach would be to connect the Facility and infrastructure to take full advantage of an outsourced solution. Disconnecting would complicate processes changes and troubleshooting. Further explanation in Q28.

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		believe this is the correct approach? Do you have any recommendations?	
Q28.	Data Center LAN	The Commonwealth is considering decoupling the Data Center Facility services from the Server, Storage, and Data Center LAN services. What do you think of this approach? What do you think are the advantages, disadvantages and tradeoffs of splitting the facility services out versus coupling these services with Server, Storage, Data Center LAN?	The industry is moving toward an agiler and Dev/Ops style of business. Applications drive this evolution and in order to take full advantage of the movement a hybrid cloud environment would seem appropriate in order to leverage this shift. The current industry trend is moving toward an as a Service model. We suggest that this model is utilized by the Commonwealth in order to take advantage of new technology trends and avoid a lockin of Data Center Hardware and Facilities. By moving toward a XaaS model decoupling the Facilities from the infrastructure would overcomplicate the environment unnecessarily. By disconnecting the Facilities from the infrastructure contracts, the full advantage of an outsourced environment would be more complicated for each vendor (facilities and Infrastructure). If combined, the one contract holder responsible for infrastructure would be more apt to utilize the most cost-effective methods to lower their overall costs. Disconnecting would cause contention between facilities and infrastructure due to new equipment additions changes moves in or out. The interaction would then be left to the MSI to manage. This would add a third level of complexity that should be central to serving the Commonwealth. Therefore we suggest not decoupling the Facilities and the Infrastructure but keep them intact as a whole in order for suppliers to utilize best of breed facilities to accommodate best of breed infrastructure and design.
Q29.	Data Center LAN	Supplier is expected to provide centralized Data Center LAN services. Should LANs in non-centralized Data Centers be part of the scope for Data Center LAN services or bid as part of Network/WAN in a future procurement? What would be	Team Presidio recommends Separate contracts for each of the non-centralized DC's. Unless these DC's can be brought under the management of the centralized DC The interfaces between the centralized Data Centers and non-centralized Data Centers should be well defined and agreed to. If this is accomplished, there is no compelling reason to put all LAN services under the centralized Data Center LAN effort. Those in charge of the non-centralized Data Centers are better positioned to do their own LAN operations.

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		the pros/cons and tradeoffs?	
Q30.	Data Center LAN	If the solution includes new Data Centers, who should provision and manage the network connections between the Data Center locations? Should it be the Network Provider, the Data Center Provider or the Server, Storage, Data Center LAN Provider?	All Network Provider, Data Center Provider, and the Infrastructure Hardware Services should be combined. Separating these will cause confusion and delay with the environment. It would also add another layer of administration by the MSI. The contractor of the Data Center contract should be responsible for the network connections. We disagree with the separation of Server, Storage, Data Center, and Network Provider.
Q31.	Data Center	How does the Supplier propose to migrate Server, Storage, Data Center LAN services out of the CESC datacenter by June 2019 or earlier? Describe how the Supplier would seamlessly migrate out of CESC like-for-like, transform to new services, or a combination of the two? What are the recommended approaches?	<p>Solving for interconnection-first provides a foundation for information exchange, integration, and digital commerce enablement. Applications are then locally assembled to respond to changing business models which depend on a responsive critical infrastructure to achieve that. Interconnecting multiple clouds and data sources on both sides of the firewall, where you place these functions, matters the most.</p> <p>The building blocks of a Digital Platform are not industry specific. Everyone must solve the same architectural challenges. In multi-party digital exchanges, the most limiting and therefore differentiating capability will be interconnection. The Edge Node as the point where the digital and physical meet and the optimal place to integrate.</p> <p>Layer capabilities on top by adding functions to that node and/or by leveraging cloud ecosystems (or direct connections). As nodes are strategically placed geographically, with optimized WAN connections between them, the result is the mesh of nodes. As a digital platform, the contractor decides what digital services to offer in which metro markets and tailors implementations with localized ecosystems.</p> <p>This design can be achieved one location at a time, with minimal upfront investment,</p>

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Q32.	Cloud Services	<p>The Commonwealth is interested in a solution that integrates traditional hosting services with new private, community, and public cloud offerings. How do you propose integrating these services?</p>	<p>and leverages technologies already used by enterprises and providers today.</p> <p>The Commonwealth has a variety of cloud deployment models to choose from:</p> <ul style="list-style-type: none"> • Private cloud in the data center • Public cloud offerings from service providers • Hybrid cloud that combines multiple clouds <p>The Commonwealth may select a combination of deployment models to define the topology and span of your data fabric.</p> <p>Data requirements differ between each cloud model, and everyone’s cloud is different—so how will your storage infrastructure be managed in the cloud to the Commonwealth’s specifications?</p> <p>Multi-cloud endpoints not only provide the Commonwealth with a choice of environments, but also enables you to avoid cloud vendor lock-in, protect assets in the event a particular cloud is compromised, and consistently and seamlessly manage assets regardless of geographical location. Solutions must support a wide array of virtualized environments and clouds today and will continue to expand to more clouds.</p> <p><u>Private Cloud</u> Private clouds may reside in the Commonwealth’s own data center or be hosted in remote facilities. Products must integrate data management capabilities across all commercial or open-source hypervisor and cloud orchestration frameworks. Products must tightly integrate data management capabilities with these ecosystems. The storage solution choices range from purpose-built to software-defined storage.</p> <p><u>Public Cloud</u> Public clouds are resources made available by service providers who offer their own</p>

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			<p>data centers and infrastructure for public use. Although the largest cloud providers operate at a scale at which they can design proprietary architectures, service providers typically choose from the same options used by enterprises architecting private clouds. Doing so enables the service providers to focus less on infrastructure and more on their core business of service innovation.</p> <p>Team Presidio utilizing NetApp infrastructure gives the Commonwealth the ability to expand your data fabrics to the cloud by offering replication and D2D services. This allows efficient onboarding of data into the cloud.</p> <p>In addition, SDS should be used to quickly create an endpoint in AWS, bringing the value of ONTAP data management to cloud storage.</p> <p><u>Hybrid Cloud</u> Hybrid cloud leverages both on-premises and public cloud resources so that the Commonwealth can build the cloud on your terms: multi-cloud and multidirectional, integrating any combination of resources that are on premises, near the cloud and in the cloud. For example, a hybrid cloud deployment may consist of storage arrays in the corporate data center and virtualized storage in AWS, connected using a common transport to replicate data from one location to the other. This simple architecture establishes a data fabric that enables application data to be served and managed the same way for all locations.</p> <p>A hybrid cloud may also connect colocation managed and/or dedicated services with cloud resources. For example, organizations may deploy a private storage array cluster in a colocation facility and use a network exchange to achieve lower latency when connecting to public cloud compute. IT departments retain control of their data, from its physical location to retention policies and service-level objectives (SLOs), and gain the benefit of data mobility across environments through the connectivity that the data fabric provides.</p>

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			<p>Exhibit 6. Data Fabric connectivity through hybrid cloud architectures <i>– Data Fabric connects everything, across diverse platforms and incompatible data silos with no down time.</i></p> 
Q33.	Cloud Services	<p>What would be the best practice with regard to Suppliers owning the cloud contracts and potentially transferring that contract to the Commonwealth? Should the Commonwealth own that contract outright? Are there any other alternatives to be considered?</p>	<p>Depending on the situation or service, certain contracts may be required to be maintained by the Commonwealth, although typically this is not the case.</p> <p>We have found it advantageous to our clients for the suppliers (typically a single supplier) to own the contracts, as the client-supplier project can be crafted to provide continued improvement and cost reduction over time. This is only achieved when the supplier has administrative/contractual control over the cloud contracts.</p>
Q34.	Cloud Services	When the Commonwealth	Identifying the location of the data and the subsequent services based upon citizen

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		<p>buys cloud services offerings how do you propose to identify where the data and services are located?</p>	<p>expectations, participating agency wishes, application, and other technical requirements, and legal requirements such as HIPPA, CJIS, etc. Now with more citizens accessing services through their smartphones than their home PC this impacts application performance in many ways. Legal requirements also mandate certain solutions today that will change over the length of this contract, especially in areas concerning cyber security. The only thing that the Commonwealth should plan for is that change is constant.</p> <p>Team Presidios’ industry-proven approach is to perform an analysis of the services an organization wishes to place in the cloud. Our methodology reviews the disposition of the applications, data, and other factors to determine the proper landing zone. In many cases, we find that “the cloud” is not the right location based on performance, cost or lifespan. Through our analysis, we review a variety of elements which allows us different perspectives and provides us the information required to identify public, private, on-premises or off-premises locations (as all cloud providers are not created equal); as well as a recommended migration wave plan.</p> <p>To simplify the topology, our team follows these steps:</p> <ol style="list-style-type: none"> 1. Localize and Optimize the Traffic 2. Segment the Traffic Flows 3. Establish Multi-Cloud Connectivity 4. Offload Internet at the Edge 5. Connect to Digital Ecosystems <p>Establishing a communications gateway in strategic population centers (or areas of density in devices for IoT) allows you to consolidate access across the field area networks (ISP, Ethernet and mobile) to localize the traffic. Solving for optimal path for OUTSIDE IN...</p> <p>Leverage choice in competitive connectivity between these geographic hubs, or edge</p>

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			<p>nodes, to create a mesh that maximizes bandwidth and balances load in the most cost effective way (reducing long-haul and back-haul). Solving INSIDE OUT...</p> <p>Direct connect to multiple clouds (enterprises average six) locally at the edge (Layer 2 or 3), providing the most efficient way to interconnect multiple clouds with the shortest distance to the users. Direct connect to the internet as well to optimize access to personal or lower risk application services. Solving MULTI-CLOUD...</p> <p>To support secure digital business, cross-connect to digital partners at the edge in a meet-me fashion (peering traffic). Shortening the distance between multi-organizational digital business flows. Solving for DIGITAL ECOSYSTEMS...</p> <p>THE BENEFITS of aggregating connectivity at a co-location edge node, and securely cross connecting segmented flows, are dramatic both in sustainable cost reduction and performance improvement. In digital, network flows are business flows, so performance translates to revenue, and these hubs give you back control over the flows.</p> <ul style="list-style-type: none"> • The practice to improve network performance has been to reduce the distance (and a number of hops) and/or reduce the payload (requiring less throughput). *Internet latency (in the U.S.) to the top clouds ranges between ~60ms and ~90ms. • Over a 100Mbps cable, at 30ms, there is already an 84% drop in throughput. • Companies implementing this mesh of edge nodes have seen up to an 85% reduction in WAN latency (MPLS) and completely bypass the internet (i.e., average latency went from 47ms down to 8ms). <p>Identifying the location of the data and the subsequent services based upon citizen expectations, participating agency wishes, application, and other technical requirements, and legal requirements such as HIPPA, CJIS, etc. Now with more citizens accessing services through their smartphones than their home PC this impacts application performance in many ways. Legal requirements also mandate certain</p>

Ref #	Category	Question	Supplier Response
			<p>solutions today that will change over the length of this contract, especially in areas concerning cyber security. The only thing that the Commonwealth should plan for is that change is constant.</p> <p>Team Presidio has helped many governments and leading corporations implement a customized data fabric that helps to safely, securely, and efficiently place data close to the resources and customers that need it the most, even if it is in two or more places at once.</p> <p>NetApp’s data fabric vision and associated products expand your cloud choices by connecting to many clouds at one time whether they are private, public or hybrid and switch between those clouds at any time and change are dictated. Team Presidio can assist the Commonwealth in achieving the following benefits:</p> <ul style="list-style-type: none"> • Get cloud on the Commonwealth’s terms. Use your own private cloud and multiple, industry-leading clouds while maintaining complete control over your data no matter where it is or whom you are allowing to access it. • Switch at any time. With a data fabric approach, the Commonwealth can put its data “in” multiple clouds, “next to” multiple clouds, and “in” your own private cloud. Once you make your first cloud connection, you can add or switch to any or all of them—in minutes. • Own and control the Commonwealth’s data. You can meet your data compliance and sovereignty requirements because you know where your data is safe, securely, and efficiently located at all times. The data no matter, where it is, can be managed as a whole through one pain of glass to ensure compliance.
B. Financial/Server Storage			
Q35.	Pricing Structure	The Commonwealth is interested in creating the	Presidio has the ability to provide pricing as required in Exhibit 4.1 and 4.2 utilizing our wholly owned subsidiary, Presidio Technology Capital. We can structure payments to

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		<p>best possible pricing structure for the Services. In light of that fact, Supplier is invited to both comment on the structure described in Exhibit 4.1 and 4.2, and to propose an alternate pricing structure if they believe that it will better serve the interests of both parties. The Commonwealth will contemplate any proposed pricing structure along five dimensions:</p> <ol style="list-style-type: none"> 1. Predictable: To the greatest extent possible, customers should be able to forecast charges ahead of time; changes in pricing that occur over time should not be a surprise. 2. Manageable: The pricing should not be so complex that it is needlessly difficult to administer. If quantities of work or equipment in the 	<p>start on delivered services and equipment as it installed, or as milestones are requested such as quarterly, annually, or required.</p> <p>Additionally, Presidio would recommend our Capacity-on-Demand that leverages the private or public cloud while moving to a variable cost model. This would give the Commonwealth the ability to expand Capacity-on-Demand. The benefits include the ease of acquiring capacity as needed and paying only for consumed resources.</p> <p>Understanding the challenges of public clouds, Presidio created the Capacity-On-Demand Model to address the unique requirements of each business. Our practical blueprint for the cloud delivers end-user experiences focused on efficiency, performance, and ease-of-use.</p> <p>The Capacity-On-Demand consumption model features all the benefits of the public cloud, but in a private, single-tenant environment with a capacity-on-demand configuration that’s customized to your environment:</p> <p>Provides the freedom to “pay-as-you-go” based only on consumed IT resources.</p> <p>Includes monitoring of your environment to predict when compute and storage resources will reach trigger events.</p> <p>Features access to additional assets that are always readily available and deployed well in advance of when you actually need them.</p> <p>Presidio takes full ownership of both the professional and managed service requirements of your Capacity-On-Demand solution. We also assume all of the capital</p>

Ref #	Category	Question	Supplier Response
		<p>environment must be measured, then those quantities should be as easy and transparent as possible to measure.</p> <p>3. Fair: The service pricing must be a reasonable proxy for a services provider’s underlying costs and should adequately recover those costs. Additionally, to the extent possible, the party that causes any incremental cost should bear that cost.</p> <p>4. Incentives: All pricing structures will incentivize certain behaviors and discourage others. The goals of the sourcing program must be kept in mind when considering the behaviors that might be driven by</p>	<p>and financial risks—you pay only for the capacity as and when you consume IT resources.</p> <p>The tiers of service would flow into the offering provided by Presidio and would be managed wholly with the additional services. Our Capacity-on-Demand Solution provides for</p> <ul style="list-style-type: none"> • Predictability with resources used. • Manageability and Simple • Fair and reasonable pricing established per contract • Incentives, Presidio would work with the Commonwealth to define discouraged behaviors and price accordingly • Flexible, we adjust with the Commonwealth’s consumption

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		<p>a pricing structure. For example, a goal to encourage server consolidation might include reduced cost at a centralized data center.</p> <p>5. Flexible: As consumption moves up and down, the charges should also adjust. Technology is an evolving industry, and the ability to turn down an old service to turn up a new service is one of the benefits of an efficient IT sourcing agreement. Such adjustments may include minor volume changes month to month, significant scope additions, reductions, or terminations, and ability of large service providers to re-deploy</p>	

Ref #	Category	Question	Supplier Response
		investments.	
Q36.	Inventory and Volume Collection	<p>The Commonwealth is interested in introducing new Resource Units that do not exist in the current contract; in order to fairly compensate Supplier for service delivered, and support the other goals described in question 36, Supplier is asked to describe their experience and approach to collecting and verifying volumes both before and after contract signing, and the approaches they use to adjusting financials in the event that the initial count is incorrect. For example, today database support is provided by the Supplier, but is not separately billable. The Commonwealth sees an advantage to separating out database support and making it a separate chargeable unit, how would the service provider collect and verify the volumes to</p>	<p>Team Presidio does not recommend taking over the existing contract. We recommend new equipment and data center and would bill resource units as new equipment comes online or as mentioned in Q35 in the Capacity on Demand methodology.</p>

Ref #	Category	Question	Supplier Response
		support this chargeable unit?	
Q37.	Asset Ownership	The Commonwealth consumes certain services today which are underpinned by a set of assets (servers, firewalls, etc.). The Commonwealth (or their designee) has the right to acquire these assets. The Commonwealth has a desire to consume services; rather than own assets, and envisions Supplier acquiring these assets and using them to provide services back to the commonwealth. Please describe experiences acquiring assets from an incumbent, and also describe your recommend financial treatment of their cost recovery for these assets.	Team Presidio does not recommend taking over the existing contract. We recommend new equipment and data center and would bill resource units as new equipment comes online or as mentioned in Q35 in the Capacity on Demand methodology.
C. Managed Security			
Q38.	Security	The Commonwealth's Managed Security description of services includes all the required scope bundled for a	Team Presidio will collaborate as needed to provide a collective approach to this bundled model with a single point of contact for accountability and delivery of the Managed Security Services.

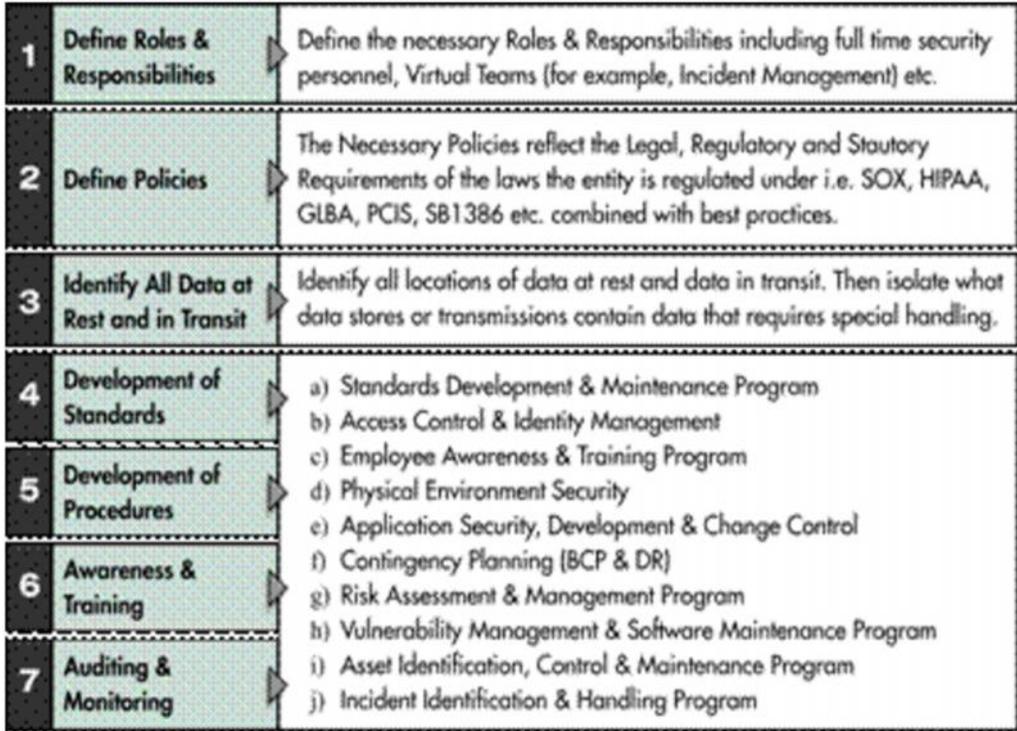
Ref #	Category	Question	Supplier Response
		single experienced Security Supplier. Do you see any challenges or issues with this bundled model?	<p>This would include a holistic bundled approach that would provide the best business outcomes, performance, security-integrated smart build technologies working together. The single experienced Security Supplier would provide the services aligned to the Commonwealths Security OEM requirements and partnership requirements to fulfill all services required. We don't see issues with the bundled model.</p> <p>The challenges with a bundled security model may include, but are not limited to:</p> <ul style="list-style-type: none"> • Governance – Establishing a single policy covering all agencies supported and establishing a transition plan to implement the new service across the Commonwealth. Central management of policy changes requires careful planning and a single change management structure that may not be in place today. • Consolidation of experience / Staffing – A bundled approach required the provider to have the depth and breadth of skills and relationships required to deliver the holistic security solution. • Single point of failure – Aggregation of delivery to a single provider increases risk and dependencies. • Keeping up with the evolution of the attack vectors – The ability to provide context to the threats and remain ahead of potential new market changes require a broad and deep capability that many single providers may not provide.
Q39.	Security	Do have any concerns or recommendations regarding how to scale Managed Security Services to organizations of the size and complexity of the Commonwealth?	Presidio follows the strategic engagement framework with specific elements around planning, design, implementation, operations and optimization. This framework ensures the ability to scale to organizations the size of the Commonwealth including the combination of using onsite and remote support engineers for optimal scalability.

Ref #	Category	Question	Supplier Response
Q40.	Security	Can you provide examples of comparable environments where you offer security services similar to those required by the Commonwealth?	<p>Yes, as the Commonwealth can appreciate, public release of specific customer references is considered sensitive and proprietary, especially regarding information security. However, Team Presidio will provide in our RFP response customers in the following sectors whose implementations are of similar size and scope to the Commonwealth:</p> <ul style="list-style-type: none"> • DoD • Intelligence Community Agencies • Federal Civilian Agencies • Commercial Enterprises
Q41.	Security	Have you supported Managed Security services in distributed environments - both physical and virtual including on premise and off premise implementations?	Yes, Team Presidio supports Managed Security Services in distributed environments – both physical and virtual including on premise and off premise implementations.
Q42.	Security	Do you offer solutions supporting geographically diverse locations (e.g., remote location with satellite)?	Yes, Team Presidio supports geographically diverse locations.
Q43.	Security	How have you implemented solutions similar to those in the Commonwealth making use of a centralized federated environment?	Team Presidio’s implementations use a “trust, but verify” approach to deploy and operate core services like security in the cloud. This ensures that the customers have visibility and control of the environment service their constituents. This people-centric approach allows for the employee to have the right to decide what information they require and how much risk to take when using technology, while still holding them accountable for their actions. The implementation of the “trust, but verify” approach is built into our full lifecycle approach to managed security discussed in Question 39.

Ref #	Category	Question	Supplier Response
			<p>In addition, Team Presidio has and does provide centralized federated <u>data protection and data sovereignty & security(at all levels), and US Soil based US Citizen Supported Managed Security Services</u>. Team Presidio has done this to other states and other government customers across the United States as well as International Global locations.</p>
Q44.	Security	<p>What do you consider to be the key challenges and tradeoffs for the implementation of Managed Security Services in an environment similar to the Commonwealth?</p>	<p>The key challenge to providing Managed Security Services in an environment similar to the Commonwealth is managing security clearance requirements for remote engineers. That said, Team Presidio has experience managing multiple security clearance levels across various customers.</p> <p>The challenges to implementation of a security solution to the size and scale of the Commonwealth may include, but are not limited to:</p> <ul style="list-style-type: none"> • Governance, risk, & compliance • Discovery • Transition & migration • Access management • Process Management <p>Management of these challenges is addressed in our full lifecycle approach to Managed Security</p> <p>Additionally, allowable work through Challenges:</p> <ul style="list-style-type: none"> • Timeline to execute

Ref #	Category	Question	Supplier Response
			<ul style="list-style-type: none"> • Transformational Plan - Commonwealth acceptance of the Best of Breed solution showing the migration from Current state/condition, thru Transformational state/condition • Desired/End state/condition to achieve the Commonwealths desired business outcomes. <p>Processes in place for the Security Towers to communicate effectively, analyze and channel to resolve issues in timely ways to prevent impact to the state.</p> <p>Team Presidio is a leader in helping U.S. Federal Government & U.S. State Government follow and achieve business success factors on the roadmap for security and many other technologies supporting government needs. Team Presidio provides business outcomes focused solutions to meet government needs and secure security support and services, which lead the industry.</p> <p>Team Presidio understand state governments challenges with budget constraints and has flexibility options to overcome this, providing cost savings and forward-thinking strategies for the Commonwealth to achieve the business outcomes desired. Based on our relationship with the Commonwealth, we will leverage our financial resources for success.</p>
Q45.	Security	What do propose at a high level to be the key strategies and implementation elements of any typical security services solution migration?	<p>A key strategy for a security services migration includes a comprehensive Service Transition Management process:</p> <ul style="list-style-type: none"> • Kick-Off Meeting • Gather existing network architectural diagrams and data flow diagrams • Gather Runbook Creation • develop a baseline security baseline and create a security posture blueprint of the current environment

Ref #	Category	Question	Supplier Response
			<ul style="list-style-type: none"> • SIEM Monitoring Framework Deployment & Connectivity Established • Monitored Environment Device Preparation • Validation and Service Turn-Up <p>Team Presidio understands the threat / attacker landscape as well as mitigation of those threats to the best way possible. We provide a Security Strategy that employs technologies and experts and resources to see the environment before, during and after a threat or attack. From DDoS, Botnet, DLP, Angler, Websites, Proxy Servers, Exploit Services Cominglement and Compromise to full Defender Collaboration, Anti-Compromised or Fractured Infrastructure measures, Team Presidio protects with the latest technologies, talent, and resources before/during/after attacks & threats, providing the holistic end-to-end solution regardless of the environment, even in multi-tenant environments. Visibility in the environment as well. Defined actionable process and procedures. Establish strong vendor/client communications. Change management is another key component of this, and Tower to Tower inter-communication and collaboration lowering impact risk and other services impact.</p> <p>Our full lifecycle approach to migration is based on the following framework and key operational elements:</p>

Ref #	Category	Question	Supplier Response
			 <p style="text-align: center;">Exhibit 7. Migration Lifecycle</p> <ul style="list-style-type: none"> This framework allows us to take a full lifecycle approach to the definition of the unique strategies required by each customer based on their maturity and the risk they face
Q46.	Security	Can you recommend additional Managed Security	Within Team Presidio Managed Security Services Scope:

Ref #	Category	Question	Supplier Response
		Services that are not currently included or considered in the scope of described services?	<ul style="list-style-type: none"> • SIEM • Global Threat Intelligence • Internal & External Vulnerability Scanning • Compliance Reporting • Security device management (IPS/IDS/FW's)
Q47.	Security	Based in your experience, what are the key challenges with regard to the regulatory requirements included in the scope of services? Do you have any recommendations based on your experience?	<p>Regulatory requirements are dependent on current state and agency environments being managed and how it can move to the compliant environment. That transition is dependent on the complexity of the environment at hand.</p> <p>The following are the five major challenges to regulatory compliance:</p> <ul style="list-style-type: none"> • Identification of where the data resides and its classification • Mapping of laws and regulations that apply to the data • Development of the policies to monitor and manage the data protection • Data growth • Mobile compliance <p>We recommend using automated tools to efficiently classify, map, and manage the Commonwealth's regulatory needs. We also recommend the use of automated Data encryption and monitoring tools to enforce compliance.</p> <p>TEAM PRESIDIO PROVIDES ALL REGULATORY/COMPLIANCE: Team Presidio is very familiar with the regulatory requirements i.e. NIST, HIPPA, and other guidelines references in the Security Description and the Cross Functional Description document for State/Federal. Team Presidio provides: US Citizen Only Support on US Soil, Data Protection to U.S. Government regulatory standards. Cleared personnel supporting the Commonwealth to State and National Security Levels.</p>

Ref #	Category	Question	Supplier Response
Q48.	Security	Do you have any guidelines or best practices regarding whether the various Managed Security Services are better off being remotely hosted or on premise?	<p>Team Presidio recommends a hybrid combination with the SIEM deployment. The SIEM receivers reside on the customer network for filtration and data correlation on the local network being monitored. While the primary SIEM receivers that have global security policies reside within Team Presidio’s data centers. This is a cost effective model.</p> <p>Team Presidio recommend Implementation of a hybrid approach as best practice. In this model, the most sensitive applications and data are compartmentalized and operated on-premise, with the remainder disbursed to the cloud. This generally provides the lowest total cost of ownership.</p> <p>Maximizing business outcomes with a Roadmap to transition as well as provide the best security services, technologies, support and redundant survivability to maximize the state’s ability for the highest business outcomes in a smart build, digital architecture method.</p> <p>Team Presidio provides the ITIL based method in applicable standards to meet or exceed the Commonwealths security needs. Full integration to technologies in the digital architecture spectrum to include server, data center, cloud/hybrid cloud, security, wireless and unified collaboration systems across the digital spectrum of integrated technology solutions</p>
Q49.	Security	Do you think you would be able to provide all the described Managed Security Services yourselves or will you require to subcontract any services to other third parties?	Team Presidio will work with our partners on portions of the Managed Security that we are unable to provide. We will go to our partners with expertise that can meet the RFP requirements.
Q50.	Scope	VITA is interested in	Our recommendation is to keep Data Center facility, Compute and Storage as one

Ref #	Category	Question	Supplier Response
	Demarcation	<p>identifying the most efficient demarcation or bundling of these services between RFPs. For example, perhaps it would be more efficient to separate the Data Center facilities from the other Server services; or perhaps it would be better to include some or all of the Security services with the Server RFP. Please provide any further experience or suggestions regarding scope demarcation between potential RFPs.</p>	<p>procurement and Managed Security Services as a separate procurement.</p> <p>Team Presidio views device management of each area as a specialization (i.e. servers, storage, network, security, wireless, voice, etc.); however, Security Incident & Event Monitoring, threat detection, analysis, response, escalation and compliance overlay all of the specific areas. Our guidance would be to distinguish between monitoring and management at the device level, and security services are laying over the entire environment.</p> <p>Team Presidio provides a comprehensive set of solutions that must span all towers; therefore Managed Security Services should not be bundled with any of the other RFPs. However, each RFP must reference the Security requirements to ensure compliance with the Commonwealth’s needs.</p>
D. Financial/Managed Security			
Q51.	Pricing Structure	<p>The Commonwealth is interested in creating the best possible pricing structure for the Services. In light of that fact, Supplier is invited to both comment on the structure described in Exhibit 4.1 and 4.2, and to propose an alternate pricing structure if they believe that it will better serve the interests of both parties. The Commonwealth will contemplate any proposed</p>	<p>Team Presidio has the ability to provide pricing as required in Exhibit 4.1 and 4.2 utilizing our wholly owned subsidiary, Presidio Technology Capital. We can structure payments to start on delivered services and equipment as it installed, or as milestones are requested such as quarterly, annually, or required.</p> <p>Additionally, Presidio would recommend at Capacity on Demand that leverages the private or public cloud while moving to a variable cost model. This would give the Commonwealth the ability to expand capacity on-demand. The benefits include the ease of acquiring capacity as needed and paying only for consumed resources.</p> <p>Understanding the challenges of public clouds, Presidio created the Capacity-On-Demand Model to address the unique requirements of each business. Our practical blueprint for the cloud delivers end-user experiences focused on efficiency,</p>

Ref #	Category	Question	Supplier Response
		<p>pricing structure along five dimensions:</p> <ol style="list-style-type: none"> 1. Predictable: To the greatest extent possible, customers should be able to forecast charges ahead of time; changes in pricing that occur over time should not be a surprise. 2. Manageable: The pricing should not be so complex that it is needlessly difficult to administer. If quantities of work or equipment in the environment must be measured, then those quantities should be as easy and transparent as possible to measure. 3. Fair: The service pricing must be a reasonable proxy for a services provider's underlying costs and should adequately recover those costs. Additionally, 	<p>performance, and ease-of-use.</p> <p>The Capacity-On-Demand consumption model features all the benefits of the public cloud, but in a private, single-tenant environment with a capacity-on-demand configuration that's customized to your environment:</p> <p>Provides the freedom to "pay-as-you-go" based only on consumed IT resources.</p> <p>Includes monitoring of your environment to predict when compute and storage resources will reach trigger events.</p> <p>Features access to additional assets that are always readily available and deployed well in advance of when you actually need them.</p> <p>Presidio takes full ownership of both the professional and managed service requirements of your Capacity-On-Demand solution. We also assume all of the capital and financial risks—you pay only for the capacity as and when you consume IT resources.</p> <p>The tiers of service would flow into the offering provided by Presidio and would be managed wholly with the additional services. Our Capacity-on-Demand Solution provides for</p> <ul style="list-style-type: none"> • Predictability with resources used. • Manageability and Simple • Fair and reasonable pricing established per contract • Incentives, Presidio would work with the Commonwealth to define discouraged behaviors and price accordingly

Ref #	Category	Question	Supplier Response
		<p>to the extent possible, the party that causes any incremental cost should bear that cost.</p> <p>4. Incentives: All pricing structures will incentivize certain behaviors and discourage others. The goals of the sourcing program must be kept in mind when considering the behaviors that might be driven by a pricing structure. For example, a goal to encourage server consolidation might include reduced cost at a centralized data center.</p> <p>5. Flexible: As consumption moves up and down, the charges should also adjust. Technology is an evolving industry, and the ability to turn down</p>	<ul style="list-style-type: none"> • Flexible, we adjust with the Commonwealth’s consumption

Ref #	Category	Question	Supplier Response
		<p>an old service to turn up a new service is one of the benefits of an efficient IT sourcing agreement. Such adjustments may include minor volume changes month to month, significant scope additions, reductions, or terminations, and ability of large service providers to re-deploy investments.</p>	
Q52.	Inventory and Volume Collection	<p>The Commonwealth is interested in introducing new Resource Units that do not exist in the current contract; in order to fairly compensate Supplier for service delivered, and support the other goals described in question 36, Supplier is asked to describe their experience and approach to collecting and verifying volumes both before and after contract signing, and the</p>	<p>Team Presidio does not recommend taking over the existing contract. We recommend new equipment and data center and would bill resource units as new equipment comes online or as mentioned in Q51 in the Capacity on Demand methodology.</p>

Ref #	Category	Question	Supplier Response
		<p>approaches they use to adjusting financials in the event that the initial count is incorrect. For example, today database support is provided by the Supplier, but is not separately billable. The Commonwealth sees an advantage to separating out database support and making it a separate chargeable unit, how would the service provider collect and verify the volumes to support this chargeable unit?</p>	
Q53.	Asset Ownership	<p>The Commonwealth consumes certain services today which are underpinned by a set of assets (servers, firewalls, etc.). The Commonwealth (or their designee) has the right to acquire these assets. The Commonwealth has a desire to consume services; rather than own assets, and envisions Supplier acquiring these assets and using them to</p>	<p>Team Presidio does not recommend taking over the existing contract. We recommend new equipment and data center and would bill resource units as new equipment comes online or as mentioned in Q51 in the Capacity on Demand methodology.</p>

Ref #	Category	Question	Supplier Response
		provide services back to the commonwealth. Please describe experiences acquiring assets from an incumbent, and also describe your recommend financial treatment of their cost recovery for these assets.	

6. Feedback Regarding RFI Documents

Please use the table below to provide commentary regarding specific documents included within this RFI, adding rows as necessary.

Ref#	Document/Section	Supplier Commentary
C1.	Exhibit 4.a	Team Presidio recommends a Dashboard type requirement as a Tab. This would help manage the contract. See an example of our Dashboard that is available.

Dashboard Login Page:

PRESIDIO Technology Capital

PASS
THE PRESIDIO ACCESS SUPPORT SYSTEM

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Active Leases Asset Tracking User Management

Presidio Technology Capital's PASS

PASS provides access to critical asset data that supports physical, contractual and financial life cycle management. PASS captures active lease and asset data that can be viewed, searched or downloaded for internal use.

To utilize PASS, just click on one of the options above.

- Active Leases displays a listing of your current leases that can be exported. Select the Lease Number for location and equipment detail.
- Asset Tracking provides a list of all assets across your lease portfolio. Search and filter capabilities allow you to narrow down your view by selecting from picklists or entering a keyword search. The entire portfolio or specific search results can be exported. Additionally, you can enter asset data in custom comment fields.

Active Leases, Contracts- Sites

PRESIDIO Technology
Capital

PASS
THE PRESIDIO ACCESS SUPPORT SYSTEM

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Marita Kosco
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Active Leases
Asset Tracking
User Management

Active Lease Listing

Contact Information

Deborah McDaniel
678.291.1914
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Leasing Specialist

Mike Benkoski
312.608.0699
mbenkoski@presidio.com

Customer

J.F. Hillerich and Son
800 West Main Street
Louisville, KY 40202

Serial number

3 Leases found

Lease Number	Lease Description	Lease Start Date	Lease Payment	Billing Frequency	End of Initial Term	End of Lease Option
671483	PO 12345	Jan-1-2012	\$572.23	Quarterly	Dec-31-2015	Fair Market Value
672364	--Add--	Jan-1-2013	\$4,310.09	Quarterly	Dec-31-2016	Fair Market Value
672721	--Add--	Apr-1-2013	\$5,885.74	Quarterly	Mar-31-2017	Fair Market Value

Export options: [CSV](#) | [Excel](#) | [XML](#)

Asset Tracking

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Active Leases
Asset Tracking
User Management

List of All Assets
Assets Custom Data

Customer (174159) **Filter Asset List(Select one or more of the following)**

J.F. Hillerich and Son
800 West Main Street
Louisville, KY 40202

Keyword: State: [Search Assets](#)

Lease Number: Part #: City: [Reset List](#)

Manufacturer: PO #: [Loading Assets...](#)

Lease #	Part Number	City	Dept	Tag#	Comment	Description
672721	C9H54UT#ABA	Fond du Lac				HP HP EliteBook 9470M
672721	C9H54UT#ABA	Fond du Lac				HP HP EliteBook 9470M
672721	C9H54UT#ABA	Fond du Lac				HP HP EliteBook 9470M
672721	C6Z47UT#ABA	Fond du Lac				HP Probook 6570B
672721	C6Z47UT#ABA	Fond du Lac	Accounting			HP Probook 6570B
672721	C6Z47UT#ABA	Fond du Lac	Sales			HP Probook 6570B
672721	C6Z47UT#ABA	Fond du Lac				HP Probook 6570B
672721	C6Z47UT#ABA	Fond du Lac				HP Probook 6570B
672721	A7E34UT#ABA	Fond du Lac				HP SB 230W Docking Station
672721	A7E34UT#ABA	Fond du Lac				HP SB 230W Docking Station

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Active Leases
Asset Tracking
User Management

List of All Assets
Assets Custom Data

Customer (174159) **Filter Asset List(Select one or more of the following)**

J.F. Hillerich and Son
800 West Main Street
Louisville, KY 40202

Keyword: State: [Search Assets](#)

Lease Number: Part #: City: [Reset List](#)

Manufacturer: PO #: [Loading Assets...](#)

Lease #	PO #	Part #	Description	Manufactur	Serial #	City	ST	Zip	Pmt. Amount
672721		C9H54UT#ABA	HP HP EliteBook 9470M	HP	CNU251C1DT	Fond du Lac	WI	54935-5611	\$5885.74
672721		C9H54UT#ABA	HP HP EliteBook 9470M	HP	CNU3019QBB	Fond du Lac	WI	54935-5611	\$0.00
672721		C9H54UT#ABA	HP HP EliteBook 9470M	HP	CNU3049QYT	Fond du Lac	WI	54935-5611	\$0.00
672721		C6Z47UT#ABA	HP Probook 6570B	HP	5CB2431FMX	Fond du Lac	WI	54935-5611	\$0.00
672721		C6Z47UT#ABA	HP Probook 6570B	HP	5CB2431FS4	Fond du Lac	WI	54935-5611	\$0.00
672721		C6Z47UT#ABA	HP Probook 6570B	HP	5CB2431FT4	Fond du Lac	WI	54935-5611	\$0.00
672721		C6Z47UT#ABA	HP Probook 6570B	HP	5CB2431FT9	Fond du Lac	WI	54935-5611	\$0.00

Export Asset List: [CSV](#) | [Excel](#) | [XML](#) Tooltip Displaying 333 assets