

Virginia Information Technologies Agency



COMMONWEALTH OF VIRGINIA
VIRGINIA INFORMATION TECHNOLOGIES AGENCY (VITA)
SUPPLY CHAIN MANAGEMENT DIVISION
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REQUEST FOR INFORMATION (RFI) 2017-14
FOR:
SERVER, DATA CENTER, AND SECURITY SERVICES

Issue Date: September 29, 2016
Due Date/Time: October 21, 2016 @ 3:00 pm Eastern
Response Delivery Method: E-mail attachment to Single Point of Contact
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VITA is committed to increasing procurement opportunities for small, women-owned, and minority-owned (SWaM) businesses, strengthening the Commonwealth's overall economic growth through the development of its IT suppliers.

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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*.

A. 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.

B. 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 (CSRМ) 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	EMC Corporation
Company Mailing Address	11013 West Broad Street Glen Allen, VA 23060
Company Website Address	www.delltechnologies.com <ul style="list-style-type: none"> • www.emc.com • www.virtustream.com • www.secureworks.com • www.rsa.com
Name of Contact Person	Erin Fitzgerald - Commonwealth of Virginia Account Executive
Contact Person E-mail Address	erin.fitzgerald@dell.com
Contact Person Telephone #	(804) 986-7982

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>Virtustream, a Dell Technologies company, provides Infrastructure Managed Services on prem and remotely for enterprise customers with mission critical systems. Virtustream customers include some of the largest, most well-known companies worldwide, as well as Federal agencies. How we would manage non-centralized agency Data Centers depends on the size, level of modernization (e.g., virtualization, converged), and location of the data center.</p> <p>The best practices from Virtustream Infrastructure Managed Services include the following people, process and technology components:</p> <p>People:</p> <ol style="list-style-type: none"> 1. All our managed services staff is ITIL trained and highly skilled across products that we service. These are ongoing investments that prove to equate to real value as customers realize the full feature sets of hardware and software, do not have to invest in people, training or hiring, and can focus on more strategic projects outside of the 'run and maintain' activities both inside and outside of the data center. 2. Shared Pools of our product specialists allow us to leverage the expertise of the team, leverage follow-the-sun resourcing, and provide backup labor across a 24x7x365 continuous timeline. 3. Custom teams designed to ensure the Customer's desired services outcomes comprised of onsite, fully leverage, or a hybrid including the following

Ref#	Category	Question	Supplier Response
			<p>activities:</p> <ul style="list-style-type: none"> • SOW compliance • Operational reporting • Operational meetings • CABs • Service delivery • Architectural guidance and planning • Issues, risks, and governance • Escalation point • Capacity planning • Monthly billing and invoicing <p>Process:</p> <ol style="list-style-type: none"> 1. Onboarding, transition, and steady-state best practices include IP and repeatable processes that ensure success in managing both old and new infrastructure solutions. These are proven over time and with many managed service customers that have entrusted Dell Technologies with their operations, continuous improvements, and security. 2. Custom runbooks are created for each engagement with all escalation and governance details mapped out prior to starting steady-state coverage. 3. Proactive monitoring performed 24x7x365 provides ‘eyes on glass’ to see symptoms before degradation or downtime is caused. With triggered alerts, engineering escalates to delivery management and product specialists so that they can take proactive & corrective actions. 4. Service Delivery Management drives weekly issues logs of infrastructure enhancements and continuous improvements assisted by technical resources working on the environment. 5. All activities are trackable, traceable and can be

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			<p>linked to specific resources working on the environment. Access is role based and secure. The customer's governance practices and reporting are taken into consideration when building any custom operational processes.</p> <ol style="list-style-type: none"> 6. Virtustream works with the Customer's CAB to get approval on changes made within the Customer's 'change window'. Changes are planned, approved, performed, and tested. 7. For Converged Infrastructure, Virtustream leverages customer service, professional service, engineering and hotline access for quick problem resolution and remediation. <p>Technology:</p> <ol style="list-style-type: none"> 1. Virtustream uses state of the art monitoring and management toolsets that are designed and tailored to the Customer's environment. These toolsets help to optimize physical and virtual IT operations. 2. Standardized or customized reporting across Capacity, Configuration, and Performance of the Customer's infrastructure is provided. 3. These toolsets maximize the value of cloud services for new hardware and software solutions and automate linkages for private, virtual private and public cloud operations. 4. Virtustream's Service Desk keeps the Customer's Service Desk up to date on all Tickets (Incident management, problem management, change management, service request fulfillment) and Change activity plans/status. Dell Technologies also offers bi-directional near real-time Service Desk integration.
Q2.	Server/Storage	What does the Supplier recommend for the length of the contract for Server, Storage, and Data Center Services? Please describe benefits	In order to achieve the greatest Return On Investment and lowest Total Cost of Ownership (for

Ref#	Category	Question	Supplier Response
		and trade-offs.	<p>whichever party owns the assets), the length of the contract should be driven by the refresh rate. From a Server perspective, servers are generally on a 3 year refresh cycle that coincides with Intel's CPU micro-architectural cycles. By keeping to a 3 year cycle, the customer will be able to take advantage of the latest system level designs and CPU, Memory, and IO technologies which all tend to occur around Intel microarchitecture revisions. Service contracts can be applied that are greater than, less than or match the refresh cycle. Obviously you don't want to have equipment that isn't under support or pay for support on systems you no longer have. It is also possible to increase the support duration at any point after the sale. Dell does not charge a premium for support after a sale.</p> <p>Due to the number of physical servers in the environment, Dell Technologies recommends VITA consider a contract that accounts for two refresh cycles for servers. VITA may want to consider a transition period in addition to the contract term.</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>Dell Technologies is flexible with respect to the term of our contracts. We find that most clients prefer 3 to 5 years so that they may achieve maximum efficiencies. Additionally, our contracts typically provide an opportunity to benchmark our services so that we remain competitive while delivering quality services. However, the Commonwealth of Virginia is unique in the respect that the end customers are dozens of agencies.</p> <p>Dell Technologies would recommend a minimum of 5 years for Data Center Facility contracts to not only secure the facility, but also to eliminate any incremental costs related to Data Center relocations.</p> <p>Considering the likely need to schedule migrations with each agency, the Commonwealth should consider a</p>

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			longer term or incorporating a “transition period” in addition to the contract for the Data Center Facility. As well, the length of the contract should consider the refresh rate of the primary infrastructure.
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?	<p>Today, the refresh rate for servers and switches tends to remain three to four years (see the answer to question #3). Beyond that, the cost to maintain older assets tends to exceed the cost to refresh.</p> <p>For storage, the movement towards flash has changed the refresh rage from every 3 years to every 6-7 years. Over the next ten years, we believe the entire market is going to flip from hard drives to All Flash. Industry experts say that for every dollar of hard drive spend there is in 2026, there'll be a \$1000 spent on Flash. What is driving this is 1) the reliability gained with flash drives, 2) newer data reduction technologies that result in cost savings, 3) the ability to improve service delivery, 4) power and cooling savings, and 5) the floor footprint savings that you have in the data center. Combined, it becomes less costly to run an All Flash data center.</p> <p>If VITA chooses to implement a strategy to modernize the data center to an all or mostly flash environment, the life of the assets greatly extends. A hybrid environment has a refresh cycle of every three or four years, while an all-flash environment has a projected refresh cycle of seven years.</p> <p>Another point to consider is the transition period and the point at which the contract begins. If the life of the existing assets in the environment can be extended and if a transition to a new environment does not begin immediately, a five year contract will not offer the best Total Cost of Ownership (TCO) to VITA.</p>

Ref#	Category	Question	Supplier Response
			<p>If the refresh cycle for servers and switches remain consistent, VITA may want to consider a contract that enables two refreshes for servers and switches and one refresh cycle for storage. The lowest TCO will likely be realized over a 7-year period with a year or more on each end for transition—the length of which will be correlated to how virtualized the environment is at that time.</p> <p>All infrastructure equipment must have an active service contracts to enable effective delivery of managed services.</p>
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>The age of the assets in the environment, the desired refresh schedule and the amount of virtualization will drive the initial capital outlay and therefore the Server RU.</p> <p>The industry continues to move towards converged and hyper-converged appliances due to the simplicity and efficiencies that drive down costs. Virtualization enables this modernization. When an environment is virtualized, there are more opportunities to measure and bill based on usage.</p> <p>In an environment that dictates physical servers, a consumption-based model is challenging. Price must be based on the dedicated resources. If management (services) costs are billed separately and a refresh cycle is agreed to, one option for the RU is to agree to prices for the term and simply spread them over that period. Without an agreed-to refresh schedule, the unknown costs to maintain must be incorporated.</p>
Q6.	Server/Storage	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	<p>Yes, we have deep experience providing tiered models.</p> <p>There are several ways to accomplish tiers of service. For an environment with consolidated storage and mixed drives, one way is to use software to assign</p>

Ref#	Category	Question	Supplier Response
		<p>enhancements for the Commonwealth to consider?</p>	<p>workloads to specific tiers. Another way to accomplish tiers of service is to separate the tiers of storage with platforms designed around the desired performance and availability. A third way to incorporate tiers of storage is to leverage a secure cloud offering with object-based storage (see our response to question #10).</p> <p>Other than cloud tiering of on-premises EMC storage and backup, tiering strategies usually involve using different drive types based on the tier of storage; however, in the near future (during the term of the next VITA contract for server/storage), industry experts believe that the total cost of ownership for flash drives will drop below that of spinning disks. With the best interests in mind of the Commonwealth, including ongoing agency satisfaction, we believe the all-flash data center with converged and hyper-converged infrastructure is the appropriate next-generation strategy for the Commonwealth. This would mean that all “tiers” would receive the best possible performance and availability on the particular platform. Providing different “tiers” of service could then be structured around the business need and risk tolerance.</p> <p>While the Commonwealth could leave the decision around platforms to the next service provider since the will be held to SLA’s, this may not be in the Commonwealth’s best interest. The Commonwealth should insist on multi-controller platforms for all business-critical applications and limit the use of single and dual controller architectures to environments such as lower “tiers” (e.g., Tier 3), remote office, and (possibly) special work requests for specific applications. The Commonwealth should also consider requesting “tiers” based on business</p>

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			<p>need (e.g., mission critical) and attributes like type of application (e.g., VDI, Oracle, Data Analytics) or type of data (e.g., file, block, object).</p> <p>We believe a modern data center designed around these attributes will facilitate agencies and VITA achieving the desired objectives of the recompute and end state.</p>
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>Yes, we do, especially if a customer is virtualized and using converged infrastructure. Virtustream offers a unit of measure called a MicroVM (μVM) whereby usage of CPU, memory, IOPS and networking bandwidth is monitored and measured every five minutes. We use our xStream software, which was built from the ground up to simplify the complexities of running, managing, maintaining and continually optimizing enterprise-class application environments. Further, using our xStream App Director for application automation, optimization and lifecycle management, you can orchestrate complex, decentralized applications on- or off-premises.</p> <p>Whether on-prem or off-prem, the billing structure is based on our unique μVM foundation—a powerful "cloud kilowatt" concept for billing, measuring, optimizing and analyzing workloads. The μVM measures CPU, RAM, I/O, and bandwidth. Measurements are taken every five minutes. This allows apps to run with better performance at lower costs.</p> <p>We can apply this type of billing based on actual usage to various environments. Other partners of ours employ similar billing mechanisms using our converged infrastructure platforms. This sort of simple RU is more challenging if physical assets are not virtualized and are dedicated to a customer. Dell Technologies collaborates with each Customer to</p>

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			<p>provide the most effective RU model. We have experience with very basic RU cost recovery models in addition to more advanced models that encompass multiple tiers of service and consumption based billing and both models are designed to eliminate complexities. We recommend VITA request bidders to differentiate billing between virtualized/non-virtualized, converged/non-converged platforms, as well as require billing based on actual usage for virtualized, converged environments to incent agencies to virtualize</p>
Q8.	Server/Storage	<p>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>	<p>From a best practices standpoint, Dell Technologies' offers Customers a variety of Service Level Agreements and Service Level Objectives across the infrastructure under management. Although Dell Technologies typically recommends a base set of SLAs that are industry standard to help control costs, Dell Technologies will also customize both SLAs and SLOs to meet Customer's business objectives.</p> <p>We encourage the Commonwealth to request bidders to propose unique methods to simplify the physical Server RU structure.</p>
Q9.	Server/Storage	<p>Do you see a better way to bundle or spilt 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>	<p>In the industry, Dell Technologies is observing more and more customers moving to a multi-supplier environment that is governed by a common entity-Integrator. There are often efficiencies and synergies that may be obtained by bundling the server, storage and network towers together. While other states may be further along with setting up MSI structures, unlike other states, VITA has made tremendous progress in the consolidation of assets and standardization. This should be built upon, not ripped apart.</p> <p>Regarding bundling, instead of having towers for each individual components, like server, storage and</p>

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			<p>network, we recommend VITA stick with a structure that recognizes the inherent integration points and cost efficiencies realized by virtualized (both server and network) environments with converged infrastructure and hyperconverged infrastructure. Consumption attributes can be measured to provide the transparency that agencies and VITA seek.</p> <p>In general, we believe VITA has designated Cross Functional requirements for a very collaborative environment between agencies, VITA, the MSI and Suppliers. We agree with this overall design, but do want to highlight that this design and the requirements in Exhibit 2.2 require extensive Program Management with strategic planning and ongoing enterprise architecture planning under each of the towers. It is also unclear how many awards may be made under one tower. While there are natural points of demarcation between the Service Towers (such as the actual servicing of desktops/laptops versus server/storage/backup/data center network), the further split each of the towers, the more cost the Commonwealth and agencies will realize. As well, the more split the towers, the more complicated the integration between toolsets, as well as points of accountability. Separating the Data Center Facility from Server/Storage/Network could be done, but we believe this will only increase the Commonwealth's cost. Plus, it could drive out the timeline. Certain data center facilities could dictate technologies, so the Server/Storage/Network would likely need to be awarded first. The Server/Storage/Network provider can also incorporate the most cost effective facilities.</p> <p>While we recommend building upon all of the efficiencies VITA has realized throughout the past</p>

Ref#	Category	Question	Supplier Response
			decade, Dell Technologies can support either a bundled or an unbundled set of services for Server, Storage, Network and Data Center Facility services.
Q10.	Server/Storage	Are their new Storage offerings, like Object Based Storage or predictive storage, that the Commonwealth should include in storage or enhanced services? How do you offer and charge for virtual storage?	<p>Yes, there are new offerings and enhanced services that the Commonwealth should request.</p> <p>From an Object Based Storage perspective, we can combine Dell Technologies' Virtustream Storage Cloud with on-premises Dell-EMC products to easily extend VITA's onsite data storage to a secure, enterprise class cloud. The Virtustream Storage Cloud's environment allows for seamless cloud tiering of on-premises EMC storage and backup, with object storage benefits to support cloud-native applications. Dell Technologies' Virtustream Storage Cloud has a number of offerings where we can</p> <ul style="list-style-type: none"> • Tier file/block data to the cloud to reduce on-site primary storage footprint while maintaining optimal performance through on-premises client-side caching and Virtustream Storage Cloud. • Automatically move backup data directly from Dell EMC protection storage to Virtustream Storage Cloud for seamless, cost effective long-term backup retention • Tier backup data from EMC protection software to Virtustream Storage Cloud for long-term backup retention • Archive cold file data to the cloud using on-premises policies to govern the placement and retention of tiered files to Virtustream Storage Cloud <p>Features that are essential include load balancing technology spread across cloud storage to deliver hyperscalable object storage for both cloud-native and mission-critical enterprise applications. Features such as</p>

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			<p>uninterrupted read access ensure near instantaneous availability in the event of an unplanned outage.</p> <p>Storage reliability coupled with the benefits of a scalable, cloud-based environment and cloud economics is something that the Commonwealth should strongly consider.</p> <p>The Virtustream Storage Cloud was designed to give the resiliency that enterprises require for their most critical data, but in a cloud environment. Built-in redundancy allows for 99.9% availability and up to 99.9999999999% (13 nines) of durability. Virtustream Storage Cloud also meets rigorous security and compliance requirements, with an ongoing certification and third-party audit program.</p> <p>Virtustream Storage Cloud provides the following service options to meet a variety of customer needs:</p> <ul style="list-style-type: none"> • Standard: Objects are ingested into a single region with data being protected within that region only. This service is best used when data needs to be readily available and online but does not require the same level of protection provided by Premium. • Standard—Infrequently Accessed: Objects are ingested into a single region with data being protected within that region only. This service is best used when data needs to be online but does not require the same level of protection provided by Premium. Standard—Infrequently Accessed is suitable for long-term archival and data that will not be accessed much. • Premium: Objects can be ingested into multiple regions with data being protected across all regions. This service is best used when data needs to be readily available, online and protected across an entire geographical area such as the US

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			<p>or Europe.</p> <ul style="list-style-type: none"> • Premium—Infrequently Accessed: Objects can be ingested into multiple regions with data being protected across all regions. This service is used when data needs to be online and protected across an entire geographical area such as the United States or Europe. It is suitable for long-term archival and data that will not be accessed much. <p>Regarding how we offer and charge for virtual storage, we charge per consumed, protected GB.</p>
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>Dell Technologies employs a dual strategy when it comes to managing performance and availability. The first is technology/feature driven through product capabilities such as de-duplication, compression, thin provisioning and pool monitoring. The second is service/process driven through capacity forecasting and management. These two approaches are integrated into our Architecture and Service Review Boards (ARB/SRB) where regular reviews are conducted to assess how the service and underlying technologies are performing to meet the goals of the client. From a tactical activity perspective, Dell Technologies runs daily health checks on the infrastructure that help in identifying stale or unused data that can either be reclaimed or re-tiered.</p> <p>Additionally, as mentioned in our answer to question #10, we can also leverage the Virtustream Storage Cloud, which was designed to give the resiliency that enterprises require for their most critical data, but in a cloud environment. Built-in redundancy allows for 99.9% availability and up to 99.9999999999% (13 nines) of durability.</p>
Q12.	Server/Storage	The Commonwealth has traditional x86 virtual servers, but it is also interested in the capabilities of a private cloud. Could they be	In general, Dell recommends leaving the physical x86 server estate separate from the cloud resource pools

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		combined or left separate? Please describe how this could be accomplished most effectively.	<p>and operating as bi-modal IT. Over time, the applications on these servers can be migrated to cloud. Migration can be accomplished by performing physical to virtual server conversion, followed by ingestion into the cloud, or the applications may be modernized and replatformed into the cloud. For legacy applications that cannot be virtualized, we can also look at whether or not the data can be archived so that it is still accessible but not unnecessarily deploying physical infrastructure.</p> <p>Although most organizations today are seeking to become as close to 100% virtualized as practicable, there may be legitimate reasons for VITA to maintain the ability to request and provision physical server instances. During bi-model IT operations, we can still achieve increased responsiveness: physical servers can be requested through a common Service Portal if desired and permitted, with some amount of automation for this process (not as automated as end-to-end virtual server provision and lifecycle management).</p>
Q13.	Server/Storage	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>Database as a Service for MS SQL, Oracle and open systems DBs (MySQL) is highly recommended by Dell Technologies, and is increasingly common across organizations transforming to IT as a Service. Typical approaches include offering a DBaaS Service Catalog with a variety of service levels differentiated by logical characteristics, including whether production or non-production, the level of data protection and/or data recovery, high availability and the like.</p> <p>Additionally, Dell Technologies could work with partners like Microsoft to provide DBaaS. For instance, with System Center and Windows Azure Pack, DBaaS can be deployed on-prem using the data center hardware while still providing the same</p>

Ref#	Category	Question	Supplier Response
			<p>function as Azure SQL Database. Dell and Microsoft deliver comprehensive solutions designed to make it easy to build, manage, and deploy powerful enterprise infrastructure and business solutions with factory pre-installed software and custom configured solutions delivered direct to customers.</p> <p>Finally, Dell Technologies offers the capability to provide cost savings through the option for an agency to choose direct backups from Dell EMC storage to Dell EMC backup infrastructure. Data Domain Boost for Enterprise Applications (DDBEA) allows application administrators (DBAs) to work with their own interfaces and workflows, yet still move data to protection storage in an efficient manner. This is possible for environments using:</p> <ul style="list-style-type: none"> • Oracle (RMAN) • Microsoft SQL • IBM DB2 • SAP HANA • SAP with Oracle (BR*Tools) <p>Using DDBEA means that instead of having to install third party backup software and giving another team the control over scheduling and workflow, the DBAs now control, when and if they protect their data. Dell will work with VITA and, as facilitated, agencies to develop the DBaaS Service Catalog, along with service levels and costing models.</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 meet than the business value they provide?	<p>Managing Customer's storage growth and identifying the appropriate tiers of service are the most common costs drivers experienced by Dell Technologies' clients. By simply managing the capacity to the appropriate tier, Dell Technologies can help Customers realize significant cost savings even while their data may be increasing year over year. Additionally, by managing capacity to</p>

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			<p>the correct tier of service, customers are able to offer flexibility to their business units. This allows the business units the opportunity to determine their need by tier, providing them the ability to predict costs.</p> <p>There are also technology features that will further drive down costs, such as:</p> <ul style="list-style-type: none"> • Compression • Deduplication, especially variable length deduplication for backups • Integrated Copy Data Management • Scale out architecture • Converged and Hyper-Converged Infrastructure • Archive, with or without application retirement • Tiering to the cloud <p>We recommend VITA require RFP respondents to describe how their proposed technologies will provide cost-effective solutions leveraging these features.</p> <p>Regarding requirements in the description of services in this RFI that would cost more to meet than the business value they provide, we see a cost driver (increase) being the little differentiation between the Incident Response Time between a Sev1 and a Sev2. Based on the criteria, if an onsite response is needed, a Sev2 would need to be treated as a Sev1. Doing so could cause problems, as there would no longer be a distinguisher between a true Sev1 and a Sev2. We recommend VITA request from RFP respondents how they could propose to effectively respond to Sev1-Sev4 incidents.</p>
Q15.	Security	The Commonwealth is interested in an Enterprise Key Management System for compliance and security. How do you propose the	Security is a primary consideration with all legacy EMC products. Differing ourselves from many

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		Commonwealth request Key Management services?	<p>competitors, we have solutions with controller-based encryption and self-encrypting drives. This provides data-at-rest encryption across our diverse product line. At scale in-flight encryption is generally provided by network solutions. However, Data Domain Encryption software option encrypts data when stored at rest on the Data Domain storage system, while Data Domain Replicator encryption option encrypts and decrypts data in-flight when replicated between Data Domain systems. Both can be enabled concurrently and achieve different security goals.</p> <p>Depending on the RU, Commonwealth data is currently protected with data-at-rest encryption. Further, Dell EMC already provides enterprise key management as a service on its legacy EMC devices. The key is replicated and stored safely with Dell EMC. This can be extended with a separate Enterprise Key Management solution. If a separate solution is desired, the Commonwealth should consider Azure Key Vault as a key management solution. Secure key management is essential to protecting data in the cloud. With Azure Key Vault, customers can encrypt keys and small secrets like passwords using keys stored in hardware security modules (HSMs). For added assurance, you can import or generate keys in HSMs. If you choose to do this, Microsoft will process your keys in FIPS 140-2 Level 2 validated HSMs (hardware and firmware). Key Vault is designed so that Microsoft does not see or extract your keys. Monitor and audit key use with Azure logging—pipe logs into Azure HDInsight or your SIEM for additional analysis and threat detection.</p> <p>Finally, Dell companies RSA and SecureWorks also offer capabilities around compliance and security. RSA offers/VITA uses Archer for governance, risk and</p>

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			<p>compliance, which we could further incorporate into the environment. SecureWorks also offers consulting around Governance, Risk and Compliance whereby we identify whether the environment has solid controls including adherence to any legal, statutory or regulatory compliance obligations among many areas, including Encryption and Key Management and Governance and Risk Management.</p>
Q16.	MSI	<p>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?</p>	<p>Today, the Commonwealth trusts Dell Technologies Security company RSA to assist with security challenges in a number of areas.</p> <p>The IAM solution VITA is contemplating encompasses products that can be categorized into four major categories: Identity Governance, Access Management, Identity Lifecycle Management and Authentication. RSA considers interoperability to be the primary challenge in combining all IAM components into a fully integrated solution.</p> <p>Of these categories, the VITA solution for Authentication is RSA's Authentication Manager, SecurID.</p> <p>RSA directly addresses each of the three remaining IAM categories (Identity Governance, Access Management and Identity Lifecycle Management) with the RSA SecurID Suite solution, a single solution fully interoperable with the Commonwealth's Authentication Manager, SecurID. Consequently, VITA can achieve full product interoperability with RSA, thereby concentrating the required services management expertise into one product in lieu of multiple platforms. In addition, VITA may take advantage of SecurID licenses it already owns to realize measurable cost savings. Any other, unproven solution introduces procurement and transition costs that significantly increase VITA's total cost of</p>

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			<p>ownership of its selected IAM solution.</p> <p>We encourage the Commonwealth to download the following overview of the SecurID Suite: https://www.rsa.com/content/dam/rsa/PDF/2016/08/rsa-securid-suite-solution-overview.pdf</p> <p>To further bring together Identity and Access Management, VITA might consider the use of VMware Workspace ONE, which also leverages RSA technology. This is VMware's simple and secure enterprise platform that delivers and manages any app on any smartphone, tablet or laptop. By integrating identity management, real-time application delivery, and enterprise mobility management, Workspace ONE engages digital employees, reduces the threat of data leakage, and modernizes traditional IT operations for the Mobile Cloud Era.</p> <p>Key Benefits of Workspace ONE include:</p> <ul style="list-style-type: none"> • Allow organizations to securely embrace SaaS, mobile apps while supporting existing enterprise applications • Give employees freedom to be productive while maintaining the right data security and compliance • Accelerate the adoption of Windows 10 and Office 365 by using the modern management frameworks designed for mobile devices • Adaptive conditional access ensures the right level of security based on authentication strength, data sensitivity, user location, security posture <p>VMware Identity Manager is our answer to the mobility and application access challenges presented with the mobile-cloud era. It is a SAML-based identity</p>

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			<p>provider that enables Single Sign-On to 3rd party web and mobile applications, resulting in a consumer-friendly and more secure user experience. The solution provides a seamless end user experience to all applications, and offers an HTML5 web portal that make it easy for users to access their apps from any device. It also provides the added advantage of requiring device enrollment for data sensitive apps to ensure that data can be wiped if lost or stolen. VMware Identity Manager can replace or interoperate with existing identity providers allowing customers to take advantage of our best in class mobile experience, without needing to fully replace existing solutions. Additional information on Workspace ONE is available at https://workspaceone.com/</p> <p>Finally, Microsoft Active Directory would also likely be integrated for Identity and Access Management. Azure Active Directory (Azure AD) is Microsoft's multi-tenant cloud based directory and identity management service. Azure AD can be integrated with an existing Windows Server Active Directory, giving organizations the ability to leverage their existing on-premises identity investments to manage access to cloud-based SaaS applications. When paired with Azure DNS and Azure Domain Services you can also improve authentication of Cloud applications.</p>
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 suppliers?	The MSI model is relatively new to the public sector with only two other states, Texas and Georgia doing something similar to what's the Commonwealth is proposing. In this case, the MSI will bring together separately contracted and supplied IT service providers to ensure they consistently work together to deliver business benefits. Therefore, the primary comment on structure and handoff is the importance

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			<p>of strong governance and compliance to the success of the project. Others have struggled when they failed to adequately define the exact steps and expectations during handoffs of responsibility and activity. Our suggestion is to create as detailed as possible run book that explicitly outlines not only the procedures and expectations when something is supposed to occur, but more importantly the process that follows when an action does not happen as planned. This can help to avoid any ambiguity between the Commonwealth, MSI, and service providers.</p> <p>We have extensive experience working with MSI models. The state of Georgia has only recently selected its MSI and we are actively engaged with their service provider selection process. In Texas, we have worked for many years with both the former and current MSI. As a result, many of our solutions are utilized by the state to provide data centers services including compute, storage, back-up, business continuity, and security. Similarly, we work with the Commonwealth's current service provider and constitute much of the underlying infrastructure delivering agency services for the last ten years.</p> <p>One area where there should be more clarity on supplier interaction is around the expectation the Commonwealth has with the MSI regarding enterprise architecture and special projects outside normal service delivery. Specifically, who scopes the project and how do custom work requests flow down to the service provider? Who is responsible for establishing the enterprise architecture and enforcing compliance? Will the contracted service provider be responsible for providing architecture assistance, professional services, and project management</p>

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			resources? While converged and hyper converged infrastructure greatly simplifies much of the architecture, there may be special projects that fall outside of existing contracted services. Therefore, it is critical to clearly define how these projects will be handled by all parties including the Commonwealth, the MSI, and the service provider.
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)?	Dell Technologies can support either a bundled or an unbundled set of services. Assuming parties are truly capable of providing these, there would be cost/service efficiencies by bundling the Data Center facility provider with common operating monitoring groups. As defined under the Common Services, we believe it could be challenging to have the Data Center Facility Provider not included in the CMOC, ITOC, and NOC. As with any operational model, defining clear roles and responsibilities is key. Dell Technologies works with Customers and the appropriate monitoring groups to outline roles, responsibilities and processes. As an output of this collaboration, Dell Technologies would envision and recommend a procedural and process handbook to seamlessly operate between operations and the monitoring group.
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?	The Multi Service Integrator's role in relation to the Server Services provider for the purpose of enhancing DR capability is to encourage and facilitate multiple service tower communication and logistics. This includes Server, Storage, WAN/LAN towers, change control, capacity planning and end user testing. The MSI's role should also be to review and hold the DR provider accountable to initiating, documenting, maintaining and publishing DR program Metrics, establishing a valid and progressive test plan and maintaining all documentation and DR training. The metrics should be based on meeting end users' needs

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			<p>or SLAs.</p> <p>EMC has witnessed a lack of confidence in the typical organization’s ability to recover from a disaster. The great majority of CIOs we have talked to over many years have stated they will only invoke their DR plan upon a “smoking-hole” scenario. Observations and actual events have proven this statement to be true.</p> <p>To increase the confidence in the ability to recover, as well as decrease planned and un-planned downtime and to enable a more economically efficient solution, we recommend designing and implementing two different options:</p> <ul style="list-style-type: none"> • 2 Site Continuous Availability using commercially available technologies drastically reducing planned and unplanned downtime and automating any fail-over with no user interruption to the application. Using EMC’s Fractional Compute provisioning, we have shown a reduced cost for this solution as compared to a combined HA Production solution and DR site. <p>And/or</p> <ul style="list-style-type: none"> • Operational Recovery to a second site (in region or out of region) at an application or business process granular level. EMC is working with several clients to mainstream this solution. • To enable and maintain this solution, it is paramount that the MSI maintain an accurate CMDB including tightly coupled dependencies and that best practices be followed on allocating and documenting compute, storage and common services • Testing is done in two ways: <ul style="list-style-type: none"> ▪ Traditional DR testing can be done as a

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			<p>smoking-hole scenario or in bundles without impacting production.</p> <p>Specific production applications or business process workloads can be migrated using planned workload migration to remove/ minimize any larger outage or reduce risk for events like power or cabling work.</p>
Q20.	Data Center	<p>The Commonwealth is interested in Multi-site High Availability and Disaster 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>Dell Technologies has observed that State level IT organizations are improving upon their DR programs by adding automation and increasing virtualization as much as possible. Some states are keeping a 2 site out of region approach while others are contemplating 3 sites in a Near/Near/far solution.</p> <p>Dell EMC's Disaster Recovery Practice, now called Business Resiliency, dates back to the 1990's. It is a robust and mature practice that has evolved to meet the demands of the current business climate. The business need will ultimately determine what is right for each customer.</p> <p>Dell EMC believes in a tiered approach for Availability and Resiliency; putting the right solution and capability in place to meet the business needs. What we currently recommend, design, implement and manage for our clients usually falls into a blended offering including 1 or more of the following.</p> <ol style="list-style-type: none"> 1. Continuous Availability 2. Operation Recovery 3. Tradition DR with tiers (example below) <ol style="list-style-type: none"> a. Gold b. Silver c. Bronze <p>One of our most in demand offerings is called "Availability and Recoverability Alternatives". In this offering, Dell EMC assists our customer with matching the business needs with solution</p>

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			<p>alternatives. The alternatives for Data Centers fall into the following buckets:</p> <ol style="list-style-type: none"> 1. Two in-region data centers (Near/Near) 2. Two (2) datacenters - Out of Region (Near/Far) 3. 3 Data Centers: 2 in region, 1 out of region in a Near/Near/Far configuration 4. 4 Data Centers: 2 in region data centers (Near/Near) cross replicating to another Near/Near pair of data centers in another region (Square configuration) <p>As part of the engagement, Dell EMC provides guidance by assembling a weighted measurement of each of the options. We consult with the client on the weighting and what should be included in the list. We suggest to include the following:</p> <ul style="list-style-type: none"> • Ability to meet customer needs • Cost (initial and ongoing) • Complexity • Ability to be automated • Scalability • Completeness of vision • Inclusiveness of all requirements <p>Within the data centers, the technology portion of Availability and Recovery Alternatives engagement focuses on the following types of solutions that can meet a wide range of Availability and Recoverability requirements.</p> <ul style="list-style-type: none"> • Continuous Application Availability is being implemented for mission critical processes: banking, manufacturing, life critical. <ul style="list-style-type: none"> • Using two (2) in region data centers, off the shelf technology and no changes to application, code, keep

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			<p>live production instances of applications and complete business processes at both locations. Each site can and does process any transaction at any time. Global load balances handle the distribution.</p> <ul style="list-style-type: none"> • The solution removes all single points of failure inclusive of a complete site failure. New data replications and virtualization technologies, coupled with advances in databases like Oracle RAC enable these solutions to be implemented. • Cost efficiency is gained by using Dell EMC's Fractional Compute Provisioning technique • If two in region data centers does not completely meet the needs of a risk profile, customer adds a 3rd data center, usually out of region and with a greatly reduced DR capability. The thinking is that if an event were to happen crippling both in region data centers, it must have been catastrophic and the industry will allow us a grace period. Often we see tape data replicated to the 3rd site with a mix of some clients having compute available, leveraging test/Dev equipment or acquiring on a best efforts basis. <ul style="list-style-type: none"> • Operational Recovery as described in Q19 • Traditional DR coupled with data replication for Application restart automation for the top tiers and application restore for the less

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			<p>critical applications</p> <p>New to this discussion is recovery and availability in the Cybercrime era we now live in. Dell EMC is adding Isolated Recovery Solutions as a line of last defense against Ransomware and Cyber destruction. For more information on Isolated Recovery Solutions, see http://www.emc.com/en-us/solutions/data-protection/isolated-recovery-solution.htm.</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 Commonwealth could migrate or transform to new Service offerings. What do you recommend for this migration plan?</p>	<p>Dell Technologies has a robust transition, implementation and delivery methodology that is largely built on ITIL practices and managed by a structured PMO and Governance organization. Post contract signature, Dell Technologies would tailor our transition plan to transition responsibilities from the current provider into our delivery model. Our plan will include the following Phases:</p> <ul style="list-style-type: none"> • Start Up Phase-the timeframe where we will establish steady state service and or transfer responsibilities from you or another provider. • Stabilization Phase-the timeframe for Dell Technologies to perform operations, establish final practices, validate performance standards against goals, confirm delivery quality, ensure completeness of service. • Steady State Phase-the timeframe that Dell Technologies will deliver services according to standard SLAs or SLOs. • Continuous Improvement Phase- the practice of constant ongoing learning and improvements, enhancements to services, improvements to service quality and sharing of benefits.
Q22.	Enhanced Services	<p>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</p>	<p>A variety of services can and should be delivered via a secure self-service portal that would be linked to internal ordering, billing, inventory, and delivery systems. Some recommended services are:</p>

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		would you recommend these services be delivered?	<ul style="list-style-type: none"> • Data Base • Data Analytics • File Storage • Desktop Software • VM's for development • Access to shared services • Platform as a Service • File Transfer services • Backup as a service <p>Many other services can be added as necessary. Some of our customers use the same portal to order office equipment as well as technology.</p> <p>Additionally, Dell Technologies is focused on providing choice for its customers through an open partner ecosystem with cloud providers that includes Virtustream, Microsoft and Amazon.</p> <p>Virtustream has built its business by guaranteeing service levels for mission critical applications – such as SAP and Oracle - on cloud infrastructure. They provide a service that no public cloud provides today. Virtustream is a vCAN partner for VMware and the preferred choice for performance intensive mission critical workloads, including Oracle.</p> <p>From a public cloud perspective, Dell Technologies has an existing, successful partnership with Microsoft Azure. We can integrate and broker the host of solutions offered in the Microsoft Azure service catalog ranging from PaaS to ITaaS. Internal to Dell Technologies, from both a legacy Dell and a legacy EMC perspective, we have the expertise to assist with integrating and deploying Microsoft solutions. In July, 2010, Dell and Microsoft announced a joint commitment to the development of a Dell Azure</p>

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			<p>Platform Appliance enabling turn-key cloud implementations. Dell continues to lead the industry transition on Microsoft products. We are Microsoft's largest reseller globally in terms of combined sales of licensing and OEM distribution. This gives Dell the unique opportunity to provide customers with special SELECT capabilities which traditional software-only resellers are unable to provide.</p> <p>VMware also recently announced a partnership with Amazon to run VMware on AWS in mid-2017. VMware on AWS is another opportunity to provide our customers with choice on how to best address their business needs as it provides a seamless management experience between private and public cloud. In addition, through VxRail and VxRack, Dell EMC provides rapid turnkey deployment.</p> <p>As VITA further defines its public cloud strategy over the forthcoming years, Dell Technologies can support bursting to the public cloud under VITA-defined guidelines, as well as monitoring for Shadow IT.</p> <p>For more information please see our response to question #32.</p>
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?	<p>This is more dependent upon the needs of the Commonwealth. With that said, the ability for almost anyone to have access to a mobile device with access to the internet, we would recommend more services that are for the people of the commonwealth. As some examples of leveraging Smart phone and Mobility offerings for services offered by a variety of agencies:</p> <ul style="list-style-type: none"> • The ability to apply for assistance • The ability to set up appointments • The ability for social services to contact and communicate with patients and other

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			<p>essential agencies.</p> <ul style="list-style-type: none"> • DOT applications, submissions and payments <p>These are just a few of the offerings that could all be backed by an integrated internal cloud from VITA. Dell Technologies company Pivotal helps enterprises deploy, scale and run applications faster on Pivotal Cloud Foundry. With Pivotal Cloud Foundry, customers have access to a fully supported, next-generation, open-source platform offering, that is deployable across several Infrastructure-as-a-Service (IaaS) platforms and integrates existing IT infrastructure with the latest cloud technology. Pivotal Cloud Foundry provides an elastic cloud platform with built-in health monitoring and support for multiple programming languages and frameworks to enable enterprises to rapidly deploy and scale applications on private and hybrid clouds. It also provides key application services for developers and management tools for IT operations to further enhance enterprise agility and productivity. The comprehensive professional services portfolio includes cloud migration, application development, integration, and managed services. Through VITA and the Server-Storage tower, Dell Technologies could offer these services to assist agencies with Platform 3 development.</p>
Q24.	Enhanced Services	What would you propose as a good business case for virtualizing the desktop (offering VDI)?	<p>There are multiple use cases with strong business ROI for which organizations today consider VDI. Below are some of the primary use cases for which we see VDI utilized:</p> <ul style="list-style-type: none"> • Client Compute Security: Centralized endpoint security in the data center • Time to consumption: Integration of new hires, new departments, new entities, etc... is streamlined

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			<ul style="list-style-type: none"> • Operational efficiencies: Deploy and redeployment of application groups, break fix, patching etc... managed centrally • Data Security: Data does not live on the end user's physical device (iPAD, laptop, Droid, etc...). • Redirection of resources: Decreased need of management on the end point front, resources time can be redirected to other tasks • Device Independent Application and Desktop Consumption: Regardless of device being used to access VITA systems, the experience remains the same, credentials follow the user.
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>Many of the leading carriers already have physical presences within the data center facilities that Dell Technologies might propose for the Commonwealth's primary Data Center Facility, as well DR and the data center for Virtustream cloud services.</p> <p>For example, QTS can provide the required connectivity for the Commonwealth. The QTS Richmond and Dulles data centers are highly connected with multiple carriers having physical presence within the QTS data centers. QTS can provide high availability access to the Internet, to the customer's data centers and to other QTS data centers.</p> <p>By allowing QTS to provide the connectivity:</p> <ol style="list-style-type: none"> 1. QTS will be responsible for all maintenance and service issue, including connectivity and networking issues 2. All monthly charges will be on one bill. No separate billing for colocation and network 3. QTS bulk purchasing agreements with the major

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			<p>carriers can provide connectivity at a price point lower than most customers can procure by themselves.</p> <p>On the other hand, if the Commonwealth has current networking contracts, QTS has several carriers with physical presence at the Richmond and Dulles data centers. Connectivity is as simple as provisioning a cross connect to the carriers meet-me room within our data center.</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>Dell Technologies can support either a bundled or an unbundled set of services.</p> <p>Dell Technologies commonly sees Data Center LAN, Server and Storage services bundled together. This should also drive cost savings.</p> <p>As with any operational model, clear roles and responsibilities are key. If Customers decide to unbundle these towers, we would work with you and the appropriate groups to outline roles, responsibilities and processes. As an output of this collaboration, Dell Technologies would envision and recommend a procedural and process handbook to seamlessly operate between groups.</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 believe this is the correct approach? Do you have any recommendations?	<p>As mentioned, we commonly see Data Center LAN, Server and Storage services bundled together. Bundling the Data Center LAN with the Data Center Facility would be the easiest, most cost-effective, least complicated solution for the Commonwealth. In our data centers, we have trusted, experienced and certified engineers on site 24x7x365 with industry leading SLAs.</p>
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	<p>Decoupling Data Center Facility services from Server, Storage, and Data Center LAN services has pros and cons. From a co-lo perspective only, having Data Center Facility services separate from the</p>

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		coupling these services with Server, Storage, Data Center LAN?	<p>Server/Storage/Data Center LAN benefits the Commonwealth if the term for the facility can extend well beyond the term of the Server/Storage/Backup/Network costs. The Commonwealth could have the option transition from one Prime Contractor for Server/Storage to another without having to physically relocate to another data center, which can be a huge cost. However, the Common Services in Exhibit 2.1-b for the Data Center Facility suggests the Commonwealth is looking for more than simply a pure co-lo.</p> <p>Separating the Data Center Facility from the Server and Storage services could also lead to complications with selecting a Data Center Facility provider that is best qualified to maintain the infrastructure currently in use or selected in the future by the Commonwealth; therefore, we advise to keep these together.</p> <p>Additionally, the greater virtualized the environment—both from a server and network perspective—the less difficult or necessary it becomes to split these services and the more points of accountability and Program Management introduced under the MSI model; therefore, it is not as beneficial or necessary to have a co-lo for the Data Center Facility separate from the Server/Storage and Data Center LAN.</p> <p>Splitting the Data Center Facility from the Server/Storage/Data Center Network as described would also lead to increased costs as there will be overhead for managing services, the architecture/engineering, and managing relationships requested in each of the service descriptions. As well, if a Prime vendor is capable of providing secure, private (including hybrid and community) clouds,</p>

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			<p>VITA could lose the flexibility to easily leverage these facilities and account the cost savings associated with these capabilities.</p> <p>While Dell Technologies can support either a bundled or an unbundled set of services, we believe that the Commonwealth is taking the right approach as originally defined with Wave 2.</p>
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 the pros/cons and tradeoffs?	<p>Dell Technologies can support either a bundled or an unbundled set of services.</p> <p>We believe that LANs in non-centralized Data Centers should be part of the scope for Data Center LAN services to effectively leverage common processes, SLAs, skill sets and reduce risks.</p>
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?	<p>This is typically the responsibility of the Carrier. The provisioning could be project managed by the Network Provider, and the management could logically fall under the responsibility of the Network Provider.</p> <p>Some data centers already have hooks into the incumbent Network Provider. This should greatly assist with transitioning to new data centers.</p>
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>Dell Technologies proposes to employ our patented Data Center Migration Methodology in combination with services designed to assess and rationalize application portfolios for investment and modernization. Dell is particularly well qualified to assist VITA with migrating out of CESC as we were contracted to perform migration of several agencies into CESC.</p> <p>Our approach would be to perform an application assessment and rationalization using Dell's Application Disposition methodology to develop a holistic strategy and plan for VITA to successfully and efficiently migrate and consolidate the assets agency by agency.</p>

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			<p>This approach results in an application-specific migration with the end result being a combination of like-for like, migration to cloud services, application modernization, transformation and replatforming or choosing other types of services which best fit the agency requirements. VITA can also expect that some applications will be designated for minimal future investment, as well as retirement and decommissioning.</p> <p>Once the Application Disposition is known, we would follow our Methodology:</p> <p>Discover</p> <ul style="list-style-type: none"> ✓ Asset Lists, CMDBs, Workshops ✓ Data normalization <p>Validate Applications & Infrastructure</p> <ul style="list-style-type: none"> ✓ Verify data gathered ✓ Validate with physical inventory ✓ Identify Exceptions <p>Application Disposition Analysis</p> <ul style="list-style-type: none"> ✓ Remain, Retire, Expand, Re-write, Re-Platform (including Cloud Services) <p>Analyze & Bundle</p> <ul style="list-style-type: none"> ✓ Migration Options ✓ Risk Analysis <p>Review & Schedule</p> <ul style="list-style-type: none"> ✓ Migration/Test Strategy ✓ Transition Report <p>Migration Procedures</p> <ul style="list-style-type: none"> ✓ Migration Runbooks <p>Test & Contingency Plans</p> <ul style="list-style-type: none"> ✓ Update Runbooks <p>Infrastructure From/To Mapping</p> <p>Pre-Migration</p> <ul style="list-style-type: none"> ✓ Facility Readiness ✓ Migration Readiness

Ref#	Category	Question	Supplier Response
			<ul style="list-style-type: none"> ✓ Application Replatform, Application Re-write ✓ Final Table Top ✓ Go/No Go Decision <p>Migration</p> <ul style="list-style-type: none"> ✓ Track Progress ✓ Physical Move ✓ Physical to Virtual ✓ Virtual to Virtual ✓ Virtual to Cloud ✓ Report/ Escalate <p>Post-Migration</p> <ul style="list-style-type: none"> ✓ Final Runbooks ✓ Executive Summary <p>Additionally, with the Data Center facilities that we would propose, we would be able to connect to the current provider for the network. The connectivity can be achieved in under 30 days.</p>
Q32.	Cloud Services	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>The Dell approach to the modern data center is to combine traditional managed services hosting with private cloud in on-premises and off-premises methods along with public cloud offerings into a single set of Service Catalog offerings. This approach is often referred to as being a “Broker of Brokers” approach, whereby the VITA agency consumer selects the service offering most closely aligned with requirements without needing to know the underlying service delivery constructs.</p> <p>The Service Catalog is presented through a unified portal with built-in, automated decision logic to assist the consumer with arriving at best-fit service offerings using logic criteria based on service levels, application criticality, data security, protection and recovery, network zones, etc.</p> <p>For more information, please reflect on our response</p>

Ref#	Category	Question	Supplier Response
			to question #22.
Q33.	Cloud Services	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>The best practice depends on the sensitivity of the data. Dell has mature solutions to assist with bursting to the cloud. The important decision that the Commonwealth must make is where/what that cloud is. For instance, we could broker cloud services to Microsoft Azure or AWS, if the Commonwealth determines that this should be part of its cloud strategy. We can also provide a solution to keep the metadata safely on-prem while leveraging public cloud providers. If the Commonwealth wants to receive the cost-benefits of leveraging clouds while ensuring that the data is properly protected, we recommend the Virtustream cloud. Virtustream specializes in working with public sector organizations with cloud solutions built specifically for their needs. We specialize in supporting federal, state and local entities—helping them meet mandatory requirements such as:</p> <ul style="list-style-type: none"> • FedRAMP • SSAE16 • ISAE3402 • PCI-DSS 2.0 • FISMA • ISO 27001-2005 • ISO 9001-2008 • HIPAA/HITECH <p>Virtustream was also recently approved by the Crown Commercial Service (CCS) as a UK government supplier under the G-Cloud 8 (G8) framework, further differentiating Virtustream from other cloud providers.</p> <p>For more information on the Virtustream cloud please visit http://www.virtustream.com/ where the</p>

Ref#	Category	Question	Supplier Response
			Commonwealth can find information on both our cloud services for the public sector (http://www.virtustream.com/solutions/public-sector) and our Infrastructure Managed Services (http://www.virtustream.com/managed-services/infrastructure-managed-services).
Q34.	Cloud Services	When the Commonwealth buys cloud services offerings how do you propose to identify where the data and services are located?	<p>As organizations move to cloud services, there is a persistent theme of needing to know where the data resides and where the underlying infrastructure is located. While that concern is understandable, the real underlying question is: "how secure is my data, and how can I be sure of its access and control?"</p> <p>Acting as broker of brokers (Q32 above), Dell can offer private, community and public cloud services. These services can be logic-driven to require that requests with certain characteristics would need to be placed in private cloud services within the Commonwealth's local facilities.</p> <p>Alternatively, for applications and data with less stringent requirements, Dell can notify and track that data is being sent to any authorized external providers, with the caveat that once those external providers have those applications and data in their facilities, we may no longer be able to identify the actual locations of services and data. The exception to this would be the use of Dell Virtustream facilities, where we would still know all information around the data.</p> <p>By virtue of being able to offer secure private cloud on premises and secure Virtustream off-premises options, Dell is able to both secure the applications, data and service offerings, as well as accurately identify and track their location.</p> <p>Dell Virtustream is FedRAMP certified, giving The</p>

Ref#	Category	Question	Supplier Response
			Commonwealth added security assessment, authorization, and continuous monitoring for cloud products and services. With Virtustream being a FedRAMP certified CSP, this will allow for expediting moving Commonwealth workloads to the cloud.
B. Financial/Server Storage			
Q35.	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.</p> <p>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 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, to the extent possible, the party that causes any incremental cost should bear that cost. 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>We understand what the Commonwealth seeks. Agencies need to know how to plan their budgets. Of course, incentives should be provided for virtualization over physical environments—enough to actually incent an agency to virtualize where possible. While the RU structure in Exhibit 4.1 could be met, the nature of it may not adequately incent modernization or capitalize on the ability to provide ultimate flexibility in consumption.</p> <p>We recommend VITA add a sixth pricing dimension: Granularity.</p> <p>Certain vendors like Virtustream have next generation tools to uniquely provide a transparent model that not only meets the five pricing dimensions to encourage consolidation, virtualization, and convergence.</p> <p>For instance (as mentioned previously), Virtustream offers a unit of measure called a microVM whereby usage of CPU, memory, IOPS and networking bandwidth is monitored and measured every five minutes. In a consolidated environment, hundreds of applications can run on the same resources yet be billed based on consumption rather than first generation measurements of 'maximum size' virtual machines for each application. The use of a microVM can reduce the use virtualized resources used by 10-40%.</p> <p>Vendors will differ with how they capture and</p>

Ref#	Category	Question	Supplier Response
		<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 investments.</p>	<p>measure usage. We recommend that rather than VITA providing a structure, VITA state the various business scenarios along with the five (or six) dimensions, as well as design a contract that can accommodate unforeseen technological advances that can continue to provide further predictability, manageability, fairness, incentives, and flexibility.</p>
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 support this chargeable unit?</p>	<p>Dell Technologies collaborates with each Customer to provide the most effective RU model. Dell Technologies has experience with very basic RU cost recovery models in addition to more advanced models that encompass multiple tiers of service and consumption based billing and both models are designed to eliminate complexities. Prior to contract commencement, Dell Technologies will conduct Due Diligence. During Due Diligence, we will be seeking to validate the volumes which will serve as a starting point. During the Start Up Phase, we will begin collecting volume baselines which are typically collected over a 30/60/90 day period. During the contracting phase, we work with Customers to define the appropriate true up processes for volume variances encountered during the Steady State Phase. Dell Technologies has worked extensively with many large customers for Inventory and Volume Collection.</p>
Q37.	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 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.</p>	<p>Dell can assist directly without incorporating a third party bank, thereby reducing the financial impact to the Commonwealth. Dell Financial Services (DFS) has experience buying back incumbent and customer-owned assets for customers with environments at least as comprehensive as the VITA server/storage environment. .</p> <p>In some situations, DFS will purchase assets owned by a customer in connection with Dell EMC executing</p>

Ref#	Category	Question	Supplier Response
			<p>a managed service offering for the customer. Multiple financial and accounting factors should be considered by the customer prior to electing this option. V should consult with their accounting organization as part of their decision making process.</p> <p>Buying back the assets from the incumbent and incorporating this cost into ongoing rates will require VITA including in the RFP detailed information about the inventory of assets in the environment. At a minimum, the following information is required to evaluate the feasibility of asset repurchase:</p> <ul style="list-style-type: none"> • Date of asset purchase • Original asset cost • Configuration details (machine model, key features) • Current asset book value • Other information as required by the proposed transaction <p>With this information, we can assist VITA with the most cost effective solution and treatment of the assets to be transferred from the current incumbent.</p>
C. Managed Security			
Q38.	Security	The Commonwealth's Managed Security description of services includes all the required scope bundled for a single experienced Security Supplier. Do you see any challenges or issues with this bundled model?	Dell Technologies offers best of breed solutions and a bundled approach to building a comprehensive security program. SecureWorks is vendor neutral in the technologies it can integrate with, and can partner with other technologies, people and process to build the right sized solution for the desired outcome.
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?	SecureWorks has no scale concerns with our MSSP platform. It was designed to be used by an MSSP and therefore scaling to a global level was a primary concern. Today, we have over 4000 clients around the globe from the largest to smallest organizations

Ref#	Category	Question	Supplier Response
			which include many public sector customers and state governments.
Q40.	Security	Can you provide examples of comparable environments where you offer security services similar to those required by the Commonwealth?	We work with a large variety of organizations and provide a vast array of solutions. Our services can integrate into any environment. We have multiple references from many customers of similar size which include state governments and agencies. Because of the inherent sensitivity of security and respecting our clients' privacy, we prefer setting up a meeting or a call with our current clients so they can give you this information directly.
Q41.	Security	Have you supported Managed Security services in distributed environments - both physical and virtual including on premise and off premise implementations?	Yes, we deploy a distributed architecture to match the client's distributed environment. We utilize a minion/master setup with multiple aggregation points to account for collection of data in some cases, other cases could use virtual or cloud collectors.
Q42.	Security	Do you offer solutions supporting geographically diverse locations (e.g., remote location with satellite)?	Yes, data collection can be achieved as long as there is connectivity.
Q43.	Security	How have you implemented solutions similar to those in the Commonwealth making use of a centralized federated environment?	Data views can be customized. We can support federated views of data or isolated subsets.
Q44.	Security	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?	We treat this as a true partnership. Knowledge and information should be shared in advance to ensure a successful implementation and continued partnership. Many times in complex environments, challenges are encountered with obtaining accurate information in a timely manner. Identifying an organization's central point of contact helps to ensure a smooth engagement.
Q45.	Security	What do you propose at a high level to be the key strategies and implementation elements of any typical security services solution migration?	There will be a project manager assigned to work with the commonwealth every step during the implementation process. Some key strategies and implementation elements

Ref#	Category	Question	Supplier Response
			<p>include:</p> <p>Transition Initiation</p> <ul style="list-style-type: none"> • Project Manager Assigned • Introduction Call • Asset Classification • Service Initiation Form (SIF) details <p>Solution Design / Process Definition</p> <ul style="list-style-type: none"> • Technical Review Call • Implementation Dates Confirmed • Booking Travel • Customer Information Entered • Devices Shipped <p>Provisioning and Installation</p> <ul style="list-style-type: none"> • Customer racks Devices • Remote vs. Onsite Implementations • Service Implementation <p>Operational Readiness</p> <ul style="list-style-type: none"> • Quality Assurance Checks <p>Service Activation</p> <ul style="list-style-type: none"> • Customer Portal training • Escalation Procedures • Project closed as successfully completed <p>Additional Service Implementation</p> <ul style="list-style-type: none"> • Extended Projects and Invoicing • New Device Requests • Sample Project Plan • Event Stream Tuning • Additional Training
Q46.	Security	Can you recommend additional Managed Security Services that are not currently included or considered in the scope of described services?	Many of the requirements included in this RFI are geared towards prevention and detection using signature based control. However, in more than 50% of breaches in the past year, advanced adversaries

Ref#	Category	Question	Supplier Response
			<p>used no malware and leveraged tools native to the environment. It takes technology and expertise (behavior based solutions on the endpoint and network) to discover advanced threat actors who rely on non-signature based techniques.</p> <p>Fortunately, with the recent upgrade of RSA NetWitness, VITA now has a powerful tool that relies on behavior-based analytics instead of the old signature based security measures. NetWitness provides log correlation, packet capture, endpoint malware analysis and event stream analysis, all of which enable near real time situational awareness of what is happening on VITA networks - extending beyond the present scope of this RFI.</p>
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>Incorporating compliance mandates into any security program adds a layer of complexity. Focusing on compliance considerations first can expose an organization to the fallacy that being compliant also means your environment is secure. In addition to continuing/further leveraging RSA Archer GRC, through SecureWorks' Governance, Risk and Compliance Services, our consultants will develop an integrated security program that addresses the Commonwealth's security concerns and compliance requirements.</p> <p>Our security consultants take a "security first" approach to compliance to create a more robust security and governance program for your organization. Continual training and certification requirements ensure that our consultants monitor changes across various compliance frameworks, including PCI, HIPAA, GLBA, FISMA and EI3PA. Additionally, SecureWorks is certified as a:</p> <ul style="list-style-type: none"> • Qualified Security Assessor (QSA)

Ref#	Category	Question	Supplier Response
			<ul style="list-style-type: none"> • PCI Approved Scanning Vendor (ASV) • PCI Forensic Investigator (PFI)
Q48.I n	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?	It depends on the service offering and on how much analysis can be done closer to the originating device, and timeframe. Short term events can be correlated on prem and longer term correlation happens at the back end due to larger storage requirements.
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?	Dell Technologies offers best of breed solutions and a bundled approach to building a comprehensive security program. SecureWorks is vendor agnostic in the technologies it can integrate with and can partner with other technologies, people, and process to build the right sized solution for the desired outcome. All the work SecureWorks performs is done in house and not by third parties.
Q50.	Scope Demarcation	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. Please provide any further experience or suggestions regarding scope demarcation between potential RFPs.	Security is a specialized area and includes more than just an IT concern; it is a business concern. Dell Technologies has the capability to include Managed Security as part of an overall program with Server, Storage, Networking and Data Center. This could benefit the Commonwealth through enhanced integration and programmatic cost savings. For instance, security requires lots of storage, which Dell Technologies can provide in the most cost effective, scalable manner. As well, this secure data may want to be leveraged by the Commonwealth for data analytics. There are also means to better secure and monitor the network that overlap. If the Commonwealth issues separate RFPs for Server-Storage and Security, VITA should consider overlaps such as these in order to gain economies of scale and consistency.
D. Financial/Managed Security			

Ref#	Category	Question	Supplier Response
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.</p> <p>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 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, to the extent possible, the party that causes any incremental cost should bear that cost. 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. 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 	<p>The requirements in sections 4.1 and 4.2 generally align with the four key areas of Gartner's Adaptive Security Architecture for Protection from Advanced Attacks – Predict, Prevent, Detect and Respond. SecureWorks similarly has 4 pillars of services that address this methodology.</p> <p><u>Managed Security Services CTOC</u></p> <p>Providing Superior, Monitored & Managed Security Services to Your Expanding Network Perimeter 24x7.</p> <p>A managed security services provider (MSSP) is an extension of your security operations that closes the loop of people, processes and technology, offering 24x7 security operations center support. SecureWorks Managed Security Services protect thousands of client environments worldwide. As a global MSSP, we deliver advanced data analytics and security insights via our Counter Threat Platform (CTP). Our information security services span complete network coverage, endpoints, vulnerability management, monitoring and analysis.</p> <p>Methodology for pricing for these services includes:</p> <ul style="list-style-type: none"> • Service type (managed vs. monitored only) • Log Source Type (e.g. Firewall, IDS, Endpoint, etc...) • Quantity of source types • Sizing of network appliances <p><u>Security Risk and Consulting</u></p> <p>Assess, Enhance, and Design Security Programs That Strengthen Your Security Posture.</p> <p>SecureWorks' Security and Risk Consulting services offer a wide variety of services ranging from Technical Testing (such as Penetration testing, web application assessments, social engineering, etc...),</p>

Ref#	Category	Question	Supplier Response
		<p>providers to re-deploy investments.</p>	<p>Security Design and Architecture services and Governance, Risk and Compliance based assessments.</p> <p>SecureWorks SRC engagements are typically scoped up front with the customer and offered as a fixed statement of work at a set hourly rate. Retainers are also available for many of the testing and assessments.</p> <p><u>Threat Intelligence</u></p> <p>Elite Threat Intelligence You Can Act On Provided by the SecureWorks Counter Threat Unit (CTU) Research Team.</p> <p>Cyber threat intelligence is evidence-based information that identifies emerging threats to your organization and helps mitigate your exposure to them. An efficient threat intelligence security team analyzes and prioritizes global and targeted threats, so your organization can proactively prevent security attacks. Take advantage of our threat intelligence gleaned through scale and visibility across 4,200+ client environments around the world. Developed by the SecureWorks Counter Threat Unit™ (CTU) research team, we develop cyber threat intelligence your organization can readily take action on.</p> <p>Pricing factors include:</p> <ul style="list-style-type: none"> • Count of users with access to the TI subscription • Subscription add-ons, such as malware analysis, STIX formatted threat feeds, etc... <p><u>Incident Response</u></p> <p>Improve Readiness, Reduce Response Time, and Minimize the Impact of a Security Breach.</p> <p>With SecureWorks Incident Response services, our expert consultants work with you to prepare your organization to respond quickly and effectively to a</p>

Ref#	Category	Question	Supplier Response
			<p>security incident. Incorporating the latest security intelligence on threat actors and their tradecraft, we ensure your team's response procedures address even the most sophisticated threats.</p> <p>SecureWorks offers IR services in both a retainer based fixed hourly rate with 36 hour SLA as well as an active response hourly rate.</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 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>	<p>Please see SecureWorks pricing methodology in Q51. Note that SecureWorks services are unmetered and not based on volume of tickets, bandwidth or data volumes. SecureWorks has line item/ individual pricing for all our security services, so if the commonwealth prefers to be charged separately for an individual service, we are able to accommodate. Device type and count collection happens at the beginning of the engagement when we are scoping the project and we rely on the appropriate resources to provide accurate information. We are able to provide pricing to accommodate either growth or inaccuracy in the following ways: Provide "up to" pricing models to allow for growth of the current device count, bill separately at the time of install for the additional devices, or adjust the amount of devices being billed at the time of install should there be a change.</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 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.</p>	<p>Dell can assist directly without incorporating a third party bank, thereby reducing the financial impact to the Commonwealth. Dell Financial Services (DFS) has experience buying back incumbent and customer-owned assets for customers with environments at least as complex as the VITA security environment. .</p> <p>In some situations, DFS will purchase assets owned by a customer in connection with Dell EMC executing a managed service offering for the customer.</p>

Ref#	Category	Question	Supplier Response
			<p>Multiple financial and accounting factors should be considered by the customer prior to electing this option. V should consult with their accounting organization as part of their decision making process. Buying back the assets from the incumbent and incorporating this cost into ongoing rates will require VITA including in the RFP detailed information about the inventory of assets in the environment. At a minimum, the following information is required to evaluate the feasibility of asset repurchase:</p> <ul style="list-style-type: none"> • Date of asset purchase • Original asset cost • Configuration details (machine model, key features) • Current asset book value • Other information as required by the proposed transaction <p>With this information, we can assist VITA with the most cost effective solution and treatment of the assets to be transferred from the current incumbent.</p>

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 2.2, R53	Regarding R53, "Where Supplier chooses to host those systems outside of a VITA Centralized Data Center or a Customer Data Center, Supplier will provision and maintain all necessary connectivity into the VITA Consolidated Data Center or the Customer Data Center and manage that connectivity to meet the Service Integrator designated performance standards," we believe the Commonwealth will not gain economies of scale or leverage the investments in securing the Commonwealth's data by hosting systems outside of a VITA Centralized Data Center. This will also complicate the transition to the MSI, introduce risk, and potentially the delay the remainder of Wave 2/Wave 3 (i.e., disentanglement). We

Ref#	Document/Section	Supplier Commentary
		<p>recommend that for the Service Management Systems, the MSI leverage the infrastructure and tools that will be provided by the Suppliers of the Server/Storage tower and Security Tower. Without requiring this, the MSI providers may include SaaS or ITaaS in their bids. In some cases, this environment may be in a cloud re-labeled as their own, but under the covers is really a provider like AWS that may not meet the stringent security requirements necessary for the Commonwealth’s data. In addition to not capitalizing on security currently in place protecting Commonwealth data or economies of scale, using an MSI-provided environment separate from the VITA Centralized Data Center may unintentionally by VITA, or intentionally by the MSI candidates, influence the remainder of Wave 2.</p>
C2.	Exhibit 2.2, R52	<p>To meet R52, “Secure systems that integrate to Service Management Systems and any supporting database(s) such that state data is clearly separated from the data of all other customers of Supplier and the customers of Supplier’s subcontractors or other vendors,” a server/storage environment for the Service Management tools can certainly be stood up within the VITA Centralized Data Center, but economies of scale will be gained by leveraging the resources managing the environment. As well, this division will assist with leveraging tools currently used to for some of the Service Management Systems in the existing environment, assuming the MSI proposes to leverage these same tools (e.g., CMDB).</p>
C3.	Exhibit 2.2, R43	<p>Regarding R43, “Any systems or hardware, excluding hardware appliances, which the Supplier wishes to be placed in the Service Tower Supplier Data Center, must be consumed from the ITISP Data Center Service Tower Supplier,” it is unclear what is meant by “hardware appliances.”</p>
C4.	Exhibit 2.2, R151-170	<p>Regarding R151-170, we applaud and agree with the inclusion of these requirements. We recommend that the VITA include in the RFP how the initial plan by VITA and the selected MSI to facilitate the necessary insight needed by tower suppliers to address these requirements. For example, please specify how/at what point will the Tower Suppliers gain access to projects and work requests in order to ensure that Tower Suppliers accurately forecast and effectively respond to needs without delays.</p>
C5.		
C6.		
C7.		
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Ref#	Document/Section	Supplier Commentary
C16.		
C17.		
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