

Section 1 Introduction

1.1 About NTS

Networking Technologies and Support, Inc. (NTS) is a full service systems integrator providing customers with a single source for a broad range of high-technology products and services.

Since its beginnings in Richmond in 1997, NTS has experienced rapid growth with additional offices in Washington DC and Virginia Beach. Currently, the company employs over 180 full-time professionals, many of them network or field engineers. NTS' services have evolved into an interrelated set of offerings focused around customized maintenance, network integration staff augmentation services, and managed services.

Today, the company's highly skilled technology professionals are capable of providing customized information technology (IT) solutions, managing technology assets, finding staff with the right skill sets, measuring and improving systems performance, and working with and training the end-user. NTS was built, and continues to grow, based on the reputation and performance of its employees.

As NTS positions itself for the future, it continues to honor the principles that have been essential to its success. Networking Technologies and Support, Inc. is a minority-owned business certified with the Virginia Regional Minority Supplier Diversity Council and the Commonwealth of Virginia's Department of Minority Business Enterprises. NTS registrations include:

VMSSDC – Virginia Minority Supplier Development Council
VDMBE – Virginia Department of Minority Business Enterprise
Virginia SWaM
VA DCJS #11-5112
ISO 20000:2005 certified
ISO 9001:2008 certified

NTS' customer base spans many industries. They include such diverse firms as: Northrop Grumman, Phillip Morris, and Bon Secours Health Systems. The company has branched out to serve state, local, and federal government entities, as well as the education market. Customers include Richmond City, Richmond City Public Schools, Fauquier County, Henrico County Public Schools, Virginia Beach, Norfolk, VITA, Virginia Lottery, the University of Virginia Medical Center, Virginia Department of Motor Vehicles, Spotsylvania County Government, United States Department of Agriculture (USDA) and the Defense Information Systems Agency (DISA), and the Medical College of Virginia(MCV).

1.2 The VITA Team

Our response represents the collective effort of the team we have assembled to meet the complex demands of VITA's infrastructure as well as its future goals of world class service delivery. Its members represent the best and brightest in the industry with 100+ years of combined experience, the expertise to deliver as required, and the financial strength to make the investments needed to be successful.

Our major team members include Gannett, PDNS, and Pure Storage, with NTS managing the Team response.



Gannett-USAToday is known for building one of the world's largest private clouds and brings a diverse set of nationwide datacenters capable of delivering the needed computing power, application hosting, and infrastructure services to the table.

PDNS.us provides the front door to the Gannett infrastructure as well as network and carrier services to customize a private cloud to meet VITA's long term objectives.

Gannett and PDNS jointly deliver the resources of a multi-billion dollar media giant that can leverage a national Private Digital Network (PDN) which transports petabytes of content daily. Such a network is available and ready to service the statewide infrastructure solution envisioned herein as it contains a vast array of ready-made production solutions and services which are currently operational today.

Pure Storage is a market leader in innovative next generation all flash storage solutions. When recognized by Gartner as a Magic Quadrant leader in solid state arrays, Gartner pointed out that Pure Storage continues to execute well on its vision of software-led solid-state arrays that leverage off-the-shelf cost-effective hardware components, providing cost-effective SSAs that are simple to upgrade and maintain compared to traditional storage array forklift upgrade paths.

And when recognized as a Magic Quadrant leader for critical capabilities, Gartner ranked Pure Storage at the top for online transaction processing, server virtualization, and virtual desktop infrastructure (source: <http://www.purestorage.com/microsites/2016-gartner-mq-and-cc.html>)

Today, with the advent of FlashBlade technology, Prue Storage is disrupting the storage market with the ability to easily grow to Petabyte-scale storage modularly and cost-effectively, one blade at a time.

Our team is rounded out with subject matter expertise in all areas needed for next generation infrastructure services:

CONXX.net <http://conxx.net> (Wireless & Network Management)

Agile Data Sites <http://agiledatasites.com> (Facilities Management – REIT)

Total Site Solutions <http://www.totalsitesolutions.com> (Facilities Management – Environmental)

Global Interactive Solutions <http://www.gisolutions.com> (Unified Communications)

In addition to the direct members of the team, we bring our OEM/vendor partnerships to bear to deliver state of the art infrastructure and security systems, including Brocade, Sophos, Intermedia, Xirrus, Symantec, VMWare, Microsoft, HP, Dell, CISCO, and more.



Section 2 Respondent Contact Information

Contact Information	Enter your response here, enlarging the box as needed
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Section 3 Response to Questions

Ref#	Category	Question	Supplier Response
3.1 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>Our team has experience owning, operating, building and supporting over 10 tier-3+ type data centers and actively grows those resources through comprehensive Real Estate Investment Trust (REIT) partnerships. Our team has experience with everything from facilities to energy, environmental, and complete infrastructures (Network, Storage, and Compute platforms). Specific examples include complete design builds of data centers, full private cloud asset ownership and a full suite of managed services to include private cloud platforms and interconnected "direct connect" public cloud services as well as hybrid derivatives, within a quality controlled, highly available, complete disaster recovery umbrella.</p> <p>Best Practices are categorized in terms of power, cooling, footprint, IT load, computing (flexible, scalable architecture), and leveraging expertise.</p> <p>Our team currently leverages these resources to support an entire ecosystem of partnerships (networks, platforms, and services) that are used to create, move, exchange and safeguard more than 2PB of information daily.</p>
Q2.	Server/Storage	What does the Supplier recommend for the length of the contract for Server, Storage, and Data Center Services? Please describe benefits and trade-offs.	<p>Long contracts benefit the provider in most cases. Unless the contracts are based on mutual investment and mutual reward/benefit (like a public private partnership). If not a PPP, then contracts should be short in terms of commitments as they relate to</p>



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			pricing. Purchase vehicles can be longer in their term but pricing must be allowed to fluctuate as markets fluctuate, technology evolves and new innovations come to fruition that should become flexible options to VITA.
Q3.	Data Center	What do you recommend for the length of the contract for the Data Center Facility for this type of environment?	Data Center facilities are a best value when tied to REIT models based on 5, 10 and 15 year terms.
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>If assets are purchased for platforms, networks, and applications then they should be on a graduated schedule of refresh not shorter than 3 years and no longer than 5 years depending on their best depreciation and couple affective lifespan allow.</p> <p>If services are migrated more to cloud (public, private or hybrid), then service terms should be based on best fit and function of the services. Where services need to be scalable, platform and application contract flexibility must be available. This flexibility can translate to some services on one year terms (like ISP & SIP services) and other on long term agreements like archived storage, etc.</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>In most cases, an organization that is in a colocation model (whether assets are owned or leased), are looking to migrate to more of a service based model rather than own, operate and maintain and refresh Servers. We have built models where we hold a budget for colocation that we allow to translate to cloud type services within the same budget. In essence a reallocation of budget from assets to services.</p> <p>The benefit of separating hardware costs is to be able to predict the cost impact of new technology. A better approach may be to abstract the hardware costs and define service level agreements that are</p>

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			<p> tied to industry trends in terms of performance improvements.</p>
Q6.	Server/Storage	<p>The Commonwealth is proposing tiering of services for Server and Storage in an attempt to align costs with availability and performance. Based on your experience, do these tiers of service have any challenges in developing a solution? Do you have experience with these service tiering model? Do you have any recommendations or enhancements for the Commonwealth to consider?</p>	<p>Yes, our team has this experience. Our current capabilities are based explicitly on this premise as this is the best practice approach. Tiered services are practical and make the overall solution much more affordable.</p> <p>Exploring cutting edge practices such as Cloud federation and layered architecture could enhance SaaS, PaaS, and IaaS delivery models.</p>
Q7.	Server/Storage	<p>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>	<p>Most of the industries that provides colocation, cloud or custom services use this model for pricing. Since it has become a unit of measure that is industry recognized, it makes sense to gauge costs in this way. We expand on this concept in that we use it to allocate a budget for a “type of Service” and encourage the continued use and the transformation of that budget for emerging technologies if needed. Flexibility is key as technology changes rapidly. The as a service delivery models mentioned above offers an easy monthly implementation of RUs</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>Levels of service are labeled often for marketing purposes. Our team creates tiered services with varying levels of replication, redundancy, burstable capacity and disaster recoverability all used in different formulas to create practical Service Level Agreements ranging from lower cost 99.9% services to the highest 99.999% services couple to costs that are commensurate. Careful risk tolerance assessments are key to determining appropriate service levels in order to leverage lower cost alternatives.</p>

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Q9.	Server/Storage	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?	Our team recognizes industry best practices in the bundling of the right mix of network, storage, compute and security systems to create the right platform for maintaining appropriate governance and security of applications in general. The format proposed by VITA for evaluating its options is intuitive and affective as a result.
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?	Storage costs have dropped dramatically and will likely continue to do so. Today's applications (and their data movement and retention requirements) require innovation technologies (like enhanced block and file systems). VITA needs to partner with a provider who understand these needs require flexibility, scalability, and comprehensive migration capability. Team member Pure's principal activities comprise the design, build, supply, professional services and maintenance support of an all-flash product portfolio. The current block storage offering consists of the Pure Storage FlashArray//m (all flash-arrays). We also have released FlashBlade (a file and object storage system).
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?	Storage platforms today are inherently high performance systems. These systems however require greater and greater bandwidth egress in order to move data for performance, reliability and survivability. Any storage solution(s) must be coupled to a complete bandwidth solution architecture for the required performance and reliability to be acceptable. As an example, Pure FlashBlade and FlashStack hyper-convergence technologies are built to meet the Big Fast data needs of tomorrow.
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 combined or left separate? Please describe how this could be	This model is the best approach, specifically coupling existing assets with a combination of private (high SLA and performance subsystems) and public cloud



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		accomplished most effectively.	scalable and flexible (elastic) services. Our team operates a national private cloud with over 8,000 virtual services hosted in 8 managed facilities and couples all of this with direct connects to several public clouds for development, elasticity and growth. This model has worked well and our best practices for this model would be our recommendation for VITA.
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)?	When we look to price database support we break down our services into several categories. We look at database development as one service and is usually based on a T&M type rate since the development process is a cooperative and dynamic environment. We then look at database maintenance as more of a flat fee that rivals traditional 24x365 support services, and then we look at data mining and analytical type services (whether forensic or quantitative in nature are required) as the most comprehensive of support models that requires a collaborative understanding of the outcomes expected, lending more towards performance based pricing models as a better fit.
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?	Critical risk tolerance assessments should be a key driver in selecting service levels. There are no real red flags in the defined structure of support services VITA envisions. That is because there has been born an entire industry called "cloud" to address such transformations. The term itself is vague. It can be used to define a pure virtual service, a pure custom service, and of course and hybrid approach with varying levels of performance (scalability) and reliability. Availability of on-demand models of computing, storage, port-count and similar services capable of metered provisioning, along with critical risk tolerance assessments will drive cost



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			considerations and availability of affordable solutions.
Q15.	Security	The Commonwealth is interested in an Enterprise Key Management System for compliance and security. How do you propose the Commonwealth request Key Management services?	<p>“Security” results from both a process and technology solution combination. These are the instruments of security but the heart of security lies in its profile or identity management capabilities and the ensuing policy management that results. A robust consolidation of IAM services will greatly improve Key management, and there are several best practice ways to deliver identity management. A key system is very affective for delivering such security but cumbersome when enrolling large user groups as service consumers that cannot implement multi-factor authentication.</p> <p>Implementing best practices associated with both encryption and key distribution will improve Key management. Consideration for decentralized encryption, centralized management with distributed execution, and support for third-party integration will improve key management services</p>
Q16.	MSI	Identity and Access Management (IAM) services and the systems supporting those functions are currently split between multiple providers. How do you propose bringing these services together to provide a single integrated service?	Our team has experience both in terms of running a large single access management solution as well as integrating disparate systems together. This is a routine effort for our team that is invoked every time our collective entities we serve acquires another company and embraces its users and content into our systems. Identity as a Service (IDaaS), an authentication infrastructure that is built, hosted and managed by our team is an option and can be configured as a single sign-on (SSO) for the comprehensive infrastructure solution.
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	We have brought together public, private and hybrid subsystems into our ecosystem and fostered cooperation between disparate systems. When



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		<p>working with MSIs? Do you have any recommendations regarding the approach for how the MSI should interact with the other suppliers?</p>	<p>integrating with other suppliers an open architecture needs to be one of the many options for cooperative data communications. To manage service delivery effectively, we utilizes Operational Level Agreements to define roles, responsibilities, expectations, and interface protocols. We use underpinning contracts to transfer risk and align subject-matter expertise to service delivery goals. These types of handoffs are customary in enterprise environments were a Service Desk model is embraced to centralize communication amongst multiple suppliers.</p>
Q18.	MSI	<p>Do you see any benefits or challenges in requiring the Data Center facility provider to also be responsible for providing common operating monitoring groups in the same solution (e.g., CMOC, ITOC, SOC, NOC)?</p>	<p>The best solution is one where responsibility is tied to performance. The more items that can be coupled, the higher the risk to the provider hence the higher quality the service needs to be in order to be affective. Robust datacenters must have tightly coupled monitoring groups to be successful. With these services already integrated, adding an external monitoring layer, while adding IV&V, and redundancy, also drives up cost. A true SLA can define this kind of service in terms of expected performance outcomes, not an insurance and rebate program but a true SLA built on best practices architectures/services.</p>
Q19.	MSI	<p>The Commonwealth currently has a single traditional DR solution that requires the entire backup Data Center to be failed over. There is a desire to move to a more flexible solution that allows single Agencies or even applications to be failed over individually. This process requires design, development, operations, testing, and coordination. What role should VITA's MSI should play in this effort in relation with the Server Services provider?</p>	<p>Our approach is one of distributed load. As datacenter federation practiced mature, this will greatly improve DR capability. We can sustain multiple complete facility failures without any downtime. Instead we only suffer degraded access available performance. The MSI role would be validation, and coordination both of testing and recovery.</p>



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Q20.	Data Center	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?	As stated in the above response, we embrace a multi-site approach. It has served our 1,000's of applications and Exabyte's of stored data well. At a minimum, 4 geographically diverse sites should be leveraged in this model, each with their own diverse pathways to each other as they are networked. Leveraging provider data centers is the best scenario for The commonwealth to transfer risk.
Q21.	Migration	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?	Experience is what we recommend. We collectively have experience taking 10's of thousands of server and storage subsystems that were assets to a complete services based model that contains a rich mixture of Public, Private and Hybrid cloud solutions. Collaboration with the incumbent is a key element of this success. Additionally, to minimize transition risk and cost, implement the MSI and create short-term temporary service delivery contracts to industry leaders (possibly including the incumbent) who have been involved with the VITA initiatives (responding to this RFI) for key infrastructure services. Migration becomes consolidation amongst the bidders vying for the Server/Data Center/ Security project. This is generally a two-phased migration approach, step one, away from the incumbent, step two, to the final provider.
Q22.	Enhanced Services	The Commonwealth is interested in receiving proposals to include new enhanced services, (e.g., Cloud, Analytics, Managed File Transfer) Can you recommend any other such enhanced services the Commonwealth should also consider including at the moment? How would you recommend these services be delivered?	In addition to leveraged platform services, VITA should consider the cost benefits of a wide variety of as a service models for everything from IDaaS to Wi-Fi as a service. Data mining, comprehensive virtualization, and Public Private Partnerships should all be explored.
Q23.	Enhanced	As the technology landscape changes in the Commonwealth's	The best solutions come from mutually beneficial



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	Services	environment, could you describe other enhanced services that VITA and VITA Customers should consider in the future?	business models. Those models come from partnerships. Vendors are designed to sell products; Partners are designed to sell solutions. Content Delivery, network monetization, County level backend support for citizen services like rural broadband are options.
Q24.	Enhanced Services	<p>What would you propose as a good business case for virtualizing the desktop (offering VDI)?</p>	<p>We embrace Desktop Virtualization.</p> <p>State level executive agencies are environments where VDI offers significant advantages. With VDI public organizations can reduce costs and simplify management by using zero and thin clients. They can also improve security and support mobility; deliver a broader range of applications to public servants and administrators; enable bring your own device (BYOD) initiatives; and centralize administrative functions such as patching and updates. Robust underlying computing and storage systems especially hyper-converged systems, enhance the business case and improve the service delivery.</p> <p>The method and pace of doing so depends on the current assets that are in use and leveraging those through their total affective life, even if those are eventually leveraged as just terminals. Then in tech refreshes the backend will be in place to support thinner clients and more of a mobile platform adoption trend.</p>
Q25.	Data Center LAN	<p>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>	<p>The carrier termination equipment at the MDF (to be on the WAN RFP). However, there are so many items of a true SLA that couple all of these components together. We suggest that they not be decoupled for the sake of budgeting silos and instead be required for the eventual platform, cloud and facility partner you choose. We treat these holistically together. That</p>

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			is ultimately a huge benefit. For example, having a fiber ring through MD, DC and VA, we are able to run a real time distributed architecture. This saves on the need to run failover and DR separately. Instead we have a distributed load balanced system on a high speed backbone. Coupling these all together under a single SLA makes the support of the solution realistic and affordable.
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?	Per our response above, this is our preferred approach. Coupling network, facilities and platforms puts control on the hands of the commonwealth and eliminates finger pointing between typically disparate systems.
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?	We believe these should all be bundled. There are more benefits to doing so than not doing so. For example, power and cooling capacity management, expressed in terms of anticipated IT load demonstrates a best practice approach where bundling serves to eliminate risks of conflicting roles and responsibilities.
Q28.	Data Center LAN	The Commonwealth is considering decoupling the Data Center Facility services from the Server, Storage, and Data Center LAN services. What do you think of this approach? What do you think are the advantages, disadvantages and tradeoffs of splitting the facility services out versus coupling these services with Server, Storage, Data Center LAN?	In our opinion it does not matter who owns the facilities, what matters is who controls them. There are many models for colocation, hosting, cloud, etc. that limit the customers' ability to control their environment. We only support models that keep full control in the client's possession. Most of these translate in to private cloud solutions, but not necessary in private owned facilities.
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?	Comprehensive performance based LAN/WAN services from a single provider will reduce cost and transfer the most risk to the supplier. However, risk of failure increases. Experience, longevity, Public Private partnerships, and financial strength all work to reduce that risk.

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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?	In our model we provide all of the following: Facilities, environmental (power and cooling), networking, servers, LAN, WAN, MAN, and professional services to fully support all of VITA's needs.
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?	Managed migration is fundamental,. There will be several subsystems that will require migration and any partner to VITA is going to have to rely on its vast experience melding old and new subsystems together to facilitate the adoption of new client services. Our collective team has over 100 actual years of experience collecting information, branding it, Monetizing it and distributing it. We can do the same for the information in its required subsystems for the Commonwealth.
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?	Simply put, by leveraging our experience, we do this very same thing. Having developed thousands of website, hosted complete solutions for hundreds of companies and having an ecosystem that fosters partnerships, we are uniquely qualified to provide asset based solutions while migrating to pure "as a Service solutions affectively. These solutions can be migrated in a phased approach from the current architecture to the future state on a priority basis, with cost objectives and quality of services as key drivers. Integration occurs organically as disparate platforms and redundant services are merged.
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?	Our business models are as unique as our full services portfolio. We could hold the "note" on assets and offer their use as a customer private cloud service or treat these very same systems as a lease to own environment and transfer ownership at a time that is right for the Commonwealth. As a reference point, we have offered but never actually been asked

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			to migrate a partner/client off of our managed services and onto their own assets they would then manage. Our services clients leverage the economies of scale associated with long term engagements.
Q34.	Cloud Services	When the Commonwealth buys cloud services offerings how do you propose to identify where the data and services are located?	This depends on whether the requirement is for public, private or hybrid cloud services. In the case of private cloud, this is a given and the Commonwealth would dictate and control these factors. In the public cloud options if leveraged those are less controllable so we tend to use these services for prototyping, proofs of concepts, testing and development, elasticity but not for long term production and scaled growth. To the fullest extent possible, we will explicitly disclose the location of data and services when known and recommend solutions where location is known.
3.2 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> <p>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.</p> <p>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.</p>	<p>Pricing models can be quite complex. We can embrace these pricing models but suggest comprehensive critical risk tolerance assessments to support Service level based pricing and to work backwards from existing known budgets.</p> <p>This is usually the case when a client requires flexibility to create the perfect blend of services and support. To that end, we work a little differently. We build to budget so that clients don't have to do the math with such complex pricing sheets to figure out their actual costs.</p> <p>We use tools to measure service level attainment. Tools that judge effective application use, data analytics and then correlate that into actionable platform planning.</p>



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		<p>Fair: The service pricing must be a reasonable proxy for a services provider’s underlying costs and should adequately recover those costs. Additionally, to the extent possible, the party that causes any incremental cost should bear that cost.</p> <p>Incentives: All pricing structures will incentivize certain behaviors and discourage others. The goals of the sourcing program must be kept in mind when considering the behaviors that might be driven by a pricing structure. For example, a goal to encourage server consolidation might include reduced cost at a centralized data center.</p> <p>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>Additionally, we offer a unique approach to monetization whereby we are able to develop revenue with our partner and contribute that back into their budgets.</p> <p>The growth of the partnership then fuels the growth of the budget and develops into real growth.</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>When we look to price database support we break down our services into several categories. We look at database development as one service and is usually based on a T&M type rate since the development process is a cooperative and dynamic environment. We then look at database maintenance as more of a flat fee that rivals traditional 24x365 support services, and then we look at data mining and analytical type services (whether forensic or quantitative in nature are required) as the most comprehensive of support models that requires a collaborative understanding of the outcomes expected, lending more towards performance based</p>



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			<p>pricing models as a better fit. Additionally, there are many forms of support for not only databases but for any resource needed. We encourage the Commonwealth to create categories for Block time, hourly and project based resources.</p> <p>Project based resources would be tied to a specific scope and timeframe hence a specific budget.</p> <p>Block time would be associated with a campaign that requires a period of consistent support.</p> <p>Hourly support would be tied to emergency or ad hoc services.</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>Acquiring the assets in question is a viable option and we have done this in the cases where team members acquire other companies, but back EOL hardware, and convert infrastructure to as a service models. We have the financial strength to affect this action.</p> <p>Leasing from the incumbent may be an economical alternative depending on the systems in question, the services they deliver, and the transition plan for those specific services. The assets would be assed at fair market value and can be a monthly or one-time above-the-line cost to the selected service delivery fee model.</p>
3.3 Managed Security			
Q38.	Security	<p>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?</p>	<p>No, we don't see a problem with this as it is also our best practice. As a large supplier of private cloud services and a large consumer of public cloud services too, we have to maintain a very large common security environment as such. It actually simplifies the entire solutions portfolio when security in inherently linked.</p>



Ref#	Category	Question	Supplier Response
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?	No, our current portfolio supports over 40,000 employees and 110 million monthly subscribers. The Commonwealth presents a familiar solution requirement from a security posture perspective.
Q40.	Security	Can you provide examples of comparable environments where you offer security services similar to those required by the Commonwealth?	Yes, we offer security services to support millions of print subscribers, hundreds of millions of digital content subscribers and 10's of thousands of enterprise users over the globe. We are comfortable advising and supplying security services to the commonwealth as a result.
Q41.	Security	Have you supported Managed Security services in distributed environments - both physical and virtual including on premise and off premise implementations?	Yes, as detailed above.
Q42.	Security	Do you offer solutions supporting geographically diverse locations (e.g., remote location with satellite)?	Yes, several diverse facilities across the country (both owned and leased) currently tied together over large diverse backbones.
Q43.	Security	How have you implemented solutions similar to those in the Commonwealth making use of a centralized federated environment?	Through organic growth and acquisition both for internal employee services and for multi-million user subscriber communities.
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?	Lack of standardization and policy, disparate systems, geographically dispersed end user community, mobile workforce, excessive turnover. Open source architecture, best-practice governance and robust Identity access management will help overcome these challenges.
Q45.	Security	What do propose at a high level to be the key strategies and implementation elements of any typical security services solution migration?	We define the user types and roles, their rights and privileges and their term. We manage those within the identity management systems that are the cornerstone for access to all subsystems. We identify data at rest, data in transit, we evaluate the need to store, and implement multi-layered protections from the edge to the endpoint. We educate the end user community to create a human firewall.



Ref#	Category	Question	Supplier Response
Q46.	Security	Can you recommend additional Managed Security Services that are not currently included or considered in the scope of described services?	We would be glad to show the Commonwealth all of our current products and services we use to fortify our multi- million subscriber community of users. Most of which the Commonwealth has asked for in its considerations. A possible new area would be mobile device management and mobile subscriber management that embraces the concept of a connected community sponsored by the Commonwealth.
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?	Regulatory requirements are what are used to create the eventual quality controls metrics. We believe that we need primarily private cloud solutions to gain tighter control over regulated data and services.
Q48.	Security	Do you have any guidelines or best practices regarding whether the various Managed Security Services are better off being remotely hosted or on premise?	We have a large private cloud, we would offer to leverage that local resource and couple that to the existing Commonwealths systems and provide migration services to our cloud and couple that if necessary to various public clouds. In doing so, security becomes centralized in terms of policy management but becomes distributed in term of reliability. A private cloud acting as a firewall to public cloud services will transfer risk from The Commonwealth to the supplier.
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?	Yes, we engage partners to transfer risk to subject matter experts. We are a core group of companies that are partnered into a large ecosystem and run on a combination of private and public cloud infrastructures. As a result, we already have these third party relationship built into our ecosystem.
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	We believe these are best left coupled together. This allows for a more comprehensive SLA and a more realistically reliable solution.



Ref#	Category	Question	Supplier Response
		provide any further experience or suggestions regarding scope demarcation between potential RFPs.	
3.4 Financial/Managed Security			
Q51.	Pricing Structure	<p>The Commonwealth is interested in creating the best possible pricing structure for the Services. In light of that fact, Supplier is invited to both comment on the structure described in Exhibit 4.1 and 4.2, and to propose an alternate pricing structure if they believe that it will better serve the interests of both parties.</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. <p>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.</p> <p>Fair: The service pricing must be a reasonable proxy for a services provider's underlying costs and should adequately recover those costs. Additionally, to the extent possible, the party that causes any incremental cost should bear that cost.</p> <p>Incentives: All pricing structures will incentivize certain behaviors and discourage others. The goals of the sourcing program must be kept in mind when considering the behaviors that might be driven by a pricing structure. For example, a goal to encourage server consolidation might include reduced cost at a centralized data center.</p> <p>Flexible: As consumption moves up and down, the charges</p>	<p>Pricing models can be quite complex. We can embrace these pricing models but suggest comprehensive critical risk tolerance assessments to support Service level based pricing and to work backwards from existing known budgets.</p> <p>This is usually the case when a client requires flexibility to create the perfect blend of services and support. To that end, we work a little differently. We build to budget so that clients don't have to do the math with such complex pricing sheets to figure out their actual costs.</p> <p>We use tools to measure service level attainment. Tools that judge effective application use, data analytics and then correlate that into actionable platform planning.</p> <p>Additionally, we offer a unique approach to monetization whereby we are able to develop revenue with our partner and contribute that back into their budgets.</p> <p>The growth of the partnership then fuels the growth of the budget and develops into real growth.</p>



Ref#	Category	Question	Supplier Response
		<p>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>	
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>When we look to price database support we break down our services into several categories. We look at database development as one service and is usually based on a T&M type rate since the development process is a cooperative and dynamic environment. We then look at database maintenance as more of a flat fee that rivals traditional 24x365 support services, and then we look at data mining and analytical type services (whether forensic or quantitative in nature are required) as the most comprehensive of support models that requires a collaborative understanding of the outcomes expected, lending more towards performance based pricing models as a better fit.</p> <p>Additionally, there are many forms of support for not only databases but for any resource needed. We encourage the Commonwealth to create categories for Block time, hourly and project based resources.</p> <p>Project based resources would be tied to a specific scope and timeframe hence a specific budget.</p> <p>Block time would be associated with a campaign that requires a period of consistent support.</p> <p>Hourly support would be tied to emergency or ad hoc</p>

Ref#	Category	Question	Supplier Response
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>services.</p> <p>Acquiring the assets in question is a viable option and we have done this in the cases where team members acquire other companies, but back EOL hardware, and convert infrastructure to as a service models. We have the financial strength to affect this action. Leasing from the incumbent may be an economical alternative depending on the systems in question, the services they deliver, and the transition plan for those specific services. The assets would be assed at fair market value and can be a monthly or one-time above-the-line cost to the selected service delivery fee model.</p>