COUNTY OF ALAMEDA

Questions & Answers

to

RFP No. 901850

### for

**Hybrid Cloud Services**

**Networking/Bidders Conferences Held October 24, 2019**

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| **This County of Alameda, General Services Agency (GSA), RFP Questions & Answers (Q&A) has been electronically issued to potential bidders via e-mail. E-mail addresses used are those in the County’s Small Local Emerging Business (SLEB) Vendor Database or from other sources. If you have registered or are certified as a SLEB, please ensure that the complete and accurate e-mail address is noted and kept updated in the SLEB Vendor Database. This RFP Q&A will also be posted on the GSA Contracting Opportunities website located at** [**http://acgov.org/gsa\_app/gsa/purchasing/bid\_content/contractopportunities.jsp**](http://acgov.org/gsa_app/gsa/purchasing/bid_content/contractopportunities.jsp) |

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**Responses to Questions from the Bidders Conferences and Written Questions**

1. Is the WAN connection between the Cloud Provider and the on-premises vendor-managed DC within the scope of this RFP, and to be managed by the vendor? If so, please specify a bandwidth requirement.
   1. **The County is open to options required by the bidder’s solution and any connectivity to the County’s network will be managed by ITD.**
2. Is there a need for SD-WAN (software defined WAN) as part of this RFP?
   1. **ITD does not have an SD-WAN, but if the recommended solution by the bidder requires one, additional assessment will be required.**
3. Can the County define its cloud strategy as it relates to this procurement?
   1. **The Hybrid Cloud solution will be an integral part of the County’s overall cloud strategy, which includes the ability of moving workloads to public clouds depending on requirements and characteristics.**
4. The RFP is void of any specifications that will allow vendors to properly size and price a solution. To promote an equal evaluation among vendors, can the County please detail minimum infrastructure specifications for the on-premise solution such as:

* Workload type
* Workload performance needs (IOPS, Latency, etc.)
* Amount of Data for each workload
* Data Growth per year (amount or percentage)
  1. **As stated in Addendum No. 2:**

**The County is interested in solutions that will deliver consumable resources that scale. The current footprint is an environment consisting of approximately 700 VMs, 250 standalone compute, 600TB of block storage split almost equally 3 ways between Compute, SQL, and NAS/filer. The County does not anticipate moving all existing workloads into the new solution in the first year but instead gradually grow into it as the County ages out older hardware and upgrade older operating systems over a period of 3 to 5 years. The County’s year-to-year storage growth fluctuates unpredictably, but the current consumption is at about 400% of where it is 10 years ago. The County is predicting a large percentage of its NAS/filer footprint to be shifted to the public cloud in the near future. The County’s virtualized compute has increased by about 75% from where it was 4 years ago. The physical compute has decreased by about 33% from where it was 4 years ago. The County also leverages Sonoma County’s datacenter to house a fraction of our local capacity for Disaster Recovery. Bidders should include in their responses their minimum specifications, if any.**

1. Please define what the County anticipates as a deliverable for the on-premise solution put into production on day 1.
   1. **Please see response to Q4. Bidders should include in their response expectations around minimum specifications, if any.**
2. Can the County provide details of its existing infrastructure that includes standalone compute, virtualized compute, virtualization, networking, and enterprise storage?
   1. **The County’s current footprint is an environment consisting of approximately 700 VMs, 250 standalone compute, 600TB of block storage split almost equally 3 ways between Compute, SQL, and NAS/filer. Its datacenter networking supports 10GbE connectivity.**
3. Is the County currently using any Cloud Services for compute, data analytics, storage, backup/archive, disaster recovery, etc.? If so, please describe.
   1. **The County is currently using Cloud Services on a limited basis. It uses Power BI for some analytics, less than 100 GB of storage (part of backup solution), no DR. All of these workloads may be considered for on premises or cloud services in the future.**
4. Can bidders use existing fiber assets the County has to extend to cloud Data Center as cost reduction method and increased reliability?
   1. **Any assumptions around fiber assets for extending the County network to a cloud Data Center should be included in the bidders responses.**
5. Is ITD looking to stretch L2 to the cloud to eliminate the need to re-IP workloads when moving/DR them to the cloud?
   1. **The County is open to solutions that include this approach.**
6. Can Alameda County also provide details on the minimum hard disk storage specifications (IOPS etc.)?
   1. **No. The County is interested in what minimum capabilities would be included in the bidder’s response.**
7. Is it accurate to say that all bare metal servers will eventually be virtualized?
   1. **To the extent possible, yes. Some standalone servers may be needed based on workloads.**
8. Will Alameda County be providing space, racks, power and environmental monitoring of the new DC?
   1. **Alameda County has a data center with standard square hole 42U/36x19inch racks, powered by dual 220V (20 or 30 amp) power feeds from different PDPs that connect to separate PDU strips via NEMA 15 or L6 connectors, and environmental monitoring. Any solution that requires special accommodations should be included in the vendor responses.**
9. Is there a budget for this project?
   1. **Budget is confidential at this time.**
10. What are the workloads identified for the initial implementation? What are the application workloads that will be running in the new compute environment?
    1. **Database, Web, App, File Server/NAS, just about any conceivable server based workloads, no VDI, no serverless at this time, however these might be considered in the future. Applications would include ERP, Imaging, Web Content Management Systems, CRMs as well as custom applications developed for various departments.**
11. Is there a specific security standard(s) which the solution must satisfy?
    1. **Alameda County has similar security standards to other state and local governments. Bidder’s must indicate which industry standards they do or do not comply with.**
12. Are any OS licenses (non-hypervisor) within the scope of the RFP?
    1. **How licensing is managed in the new solution needs to be clarified by the bidder in their proposal . The County is open to how licensing can be included in the new solution, but bidder would need to price it separately.**
13. Are you anticipating upgrading all the 2008 OS to 2016? How many 2008 servers do you have?
    1. **Windows 2008 is not planned to be in the new solution.**
14. Who is the current vendor for data center networking?
    1. **Cisco and Palo Alto.**
15. What public cloud providers are you using today and the provider would need to integrate with in regards to WM migration and cold storage needs?
    1. **The County currently has commitments with more than one public cloud provider, and is open to integrations with current and other public government certified cloud providers.**
16. Has there been any consideration to container technologies such as Kubernetes or Openshift to adopt a cloud centric approach?
    1. **The County is open to adopting server-less technologies in the new potential solution.**
17. Is the primary focus to have a public cloud, a private cloud, or a hybrid cloud?
    1. **The focus is to have a hybrid cloud that can leverage public/private clouds as needed.**
18. What is the relationship between your developers and operations teams?
    1. **They are collaborative across their defined roles.**
19. Page 5 of the RFP, section A (INTENT) states:

***It is the intent of these specifications, terms and conditions to describe hybrid cloud services requested by the County.*** ***The County intends to award a five-year contract to the bidder(s) selected as the most responsible bidder(s) whose response conforms to the RFP and meets the County’s requirements.***

Can the County provide initial cloud term length? Can it be monthly or annual?

**Bidders should specify their available term lengths in their responses.**

1. Can the County give guidance around infrastructure sizing? What is the initial expected utilization CPU’s, Memory, Storage Tiers and sizing (Terabytes, Petabytes)? Is object storage required? What is the expected annual growth of infrastructure?
   1. **Please see response to Q4.**
2. Is there a Current County CRM Ticketing Solution?
   1. **The County does not have a CRM solution for ticketing. The ticketing solution is Ivanti.**
3. Page 5 of the RFP, section B (SCOPE/BACKGROUND) states:

***Alameda County – Information Technology Department (ITD) is looking to implement a hybrid cloud solution consisting of compute, virtual storage, and virtual networking. The system will exist on premises in ITD’s data center and can be integrated public cloud options.***

Does this mean that the solution set cannot be on colocation with the cloud service provider managing the hybrid cloud architecture? Are you looking for native cloud solutions or a managed services/co-lo?

* 1. **The County expects the need to run some workloads on-premise, but will consider all options in the bidder’s interpretation of hybrid cloud.**

1. Will ITD consider an option for the winning bidder to provide migration services from current environment to new Hybrid Cloud environment?
   1. **The County will consider any migration services offered. These should be outlined and priced separately from consumption-based storage and compute services.**
2. It is stated that the County ITD is looking to implement a hybrid cloud solution of compute, virtual storage, and virtual networking without listing ITD’s current IT infrastructure that would be included in the scope of this project. Can the County provide an inventory of its current IT infrastructure including hardware and related system software, operating systems, disaster recovery infrastructure, and key applications that would be included within the scope of this project?
   1. **The County’s inventory includes commodity hardware running both Windows and Linux operating systems. The County has a subset of matching capabilities at Sonoma County for DR and leverage CommVault for backup and recovery. Please see response to Q4.**
3. What kind of workloads (applications, databases, VMs etc.) would ITD live-migrate to the cloud? Can you provide sizing requirements?
   1. **Please see Q4. The County is open to live-migration capabilities.**
4. Can ITD provide capacity requirements for Compute, memory and storage?
   1. **Please response to Q4.**
5. How much of the environment is currently virtualized?
   1. **The County’s footprint is an environment consisting of approximately 700 VMs, 250-standalone compute.**
6. Can the County provide more details on the scope of this project and anticipated workloads?
   1. **Please see response to Q4.**
7. Will the on premise solution be fully managed by County staff?
   1. **No. The desire is that County staff would manage the administration of the solution and the vender manages the underlying hardware.**
8. In section B. Scope/Background, there is mention of “integrate public cloud options.” Can ITD kindly expand upon what uses cases they have for using a public cloud (ie. Disaster recovery or datacenter extension, etc.)?
   1. **The County does not have any specific use cases, but are interested and open to all options that can leverage government certified public cloud offerings.**
9. Is the primary focus to have a public cloud, a private cloud, or a hybrid cloud?
   1. **Any that can meet the County’s consumption goals knowing that we will have a mixed presence driven by need. See response to Q21.**
10. How much initial capacity (memory, storage, compute) does ITD need in a public cloud?
    1. **Please see response to Q4.**
11. What expectation does ITD have for the bidder in terms of sizing a solution?
    1. **The County expects the bidder to specify the best solution that can meet the existing and future needs taking into account their minimum sizing options for such a solution as well as long-term growth with the solution.**
12. How much overall used storage capacity will be moved and/or needed for the new environment along with yearly growth expectations?
    1. **Please see response to Q4.**
13. Is the County interested in a fully managed aaS model in where the provider retains all capital ownership of the compute, storage and network assets and charges the client a monthly rate to consume the infrastructure?
    1. **Yes, but the County is open to creative options.**
14. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (1) states:

***Must be capable of 10GB connectivity***

Can the County clarify the Hybrid connectivity requirement - Do you require private network connectivity to cloud services or IPSEC over existing internet connection? What is the minimum bandwidth requirement for cloud connectivity?

* 1. **10GB connectivity is supported in the County’s datacenter. The County is open to other cloud connectivity options. There is no estimate on bandwidth requirements.**

1. What is the existing Cisco Bill of Materials? How is it configured with the existing compute? Do you want an environment where the proposed platform is deployed side by side with the existing compute?
   1. **Additional details on network configuration beyond what has been noted previously will be shared with the awarded vendor. As noted previously, the new solution will co-exist with the existing environment for an extended period (3 to 5 years or more).**
2. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS), item b (Compute Specific) (2) states:

***Must support policy based virtualized network microsegmentation (workload and security isolation)***

Is ITD expecting that workload security policies are created once and then follow workloads between on premise and the public cloud thereby creating a consistent security framework?

* 1. **Yes and the County is open to options.**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS), item b (Compute Specific) (5) states:

***Must have the ability to load balance workloads within the virtualization environment***

What workloads does the County wish to keep on-premise within county data centers?

* 1. **The County believes that there will be workloads that stay on-premises, but will rely on bidder responses for the best options.**

1. Are there specific workloads the County wishes to place in the cloud?
   1. **This will be determined as the need comes.**
2. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (2) states:

***Can be integrated with Cisco switching technologies on 10GB and 1GB***

Are there any plans to refresh the Cisco switching technologies to offer faster networking capabilities? Is 25GbE preferred?

* 1. **There are no plans to replace any Cisco switching technologies. There is no preference for 25GbE, but the County will need support for LACP to team 10Gb connections to the County’s environment.**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (7) states:

***Provisioning requirements that exceed the capabilities of the environment shall have a maximum of 2 weeks for delivery***

Is this provisioning requirement stating that incremental storage purchases must be delivered within 2 weeks from the time a Purchase order is received? Or is this requirement based upon the assumption that the County is proceeding with a consumption model and incremental storage must be shipped when capacity utilization reaches a specific threshold?

* 1. **The County is interested in a consumption model as described, but if OPEX is not achievable, then with CAPEX a longer delivery is tolerable.**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (3) states:

**Can integrate with existing CommVault backup solution**

Can Commvault be used to backup workloads and data or is deeper integration required?

* 1. **Primarily for backing up workloads and data, and are open to deeper integrations.**

1. Please specify the existing CommVault deployment. Do you wish to restore from existing backups to the new environment? Is this your current Backup solution?
   1. **The County has CommVault in its local datacenter backing up all workloads and has an identical system in Sonoma where the local backup content is replicated to. The County is open to migration options either leveraging CommVault or the capabilities of the recommended solution.**
2. What backup solution – version information please?
   1. **CommVault v11 SP16.**
3. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (4) states:

***Compatible with existing Trend AntiVirus and modern Endpoint Detection and Response (EDR) solutions***

Does this mean Trend must be able to be used to protect endpoints or is API level integration needed?

* 1. **This is to protect the hypervisor, endpoint, and API level such as ICAP.**

1. To what extent does your existing EDR interact with your server compute?
   1. **The County currently do not have an EDR. If the vendor’s solution has limitations or constraints regarding an EDR solution, please include in the proposal.**
2. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (9) states:

***Persistent encryption for data at rest***

What is the encryption today that we need to integrate with for persistent encryption for data at rest?

* 1. **There isn’t one in use today. Bidders are encouraged to include encryption options in their solutions.**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (6) states:

***Has the ability to support bursting needs***

What bursting levels are needed? Storage and/or compute? For bursting needs, what percentage of additional capacity is required in reserves for bursting?

* 1. **It is mainly compute, but storage would be tied to the compute. Levels depends on project needs for their discovery. The County does not anticipate bursts based on short-term performance demands given that we expect a buffer of capacity to be available.**

1. Can the County please clarify - Is additional capacity (compute/storage/networking) held in reserve, but not used and allows for peaks in performance based on current gathered perf data? Is this a consumption model (i.e. only paying for what you use, but having the ability to increase compute/storage/networking capacity as needed)? How much notice is available prior to bursting (does it need to be available immediately, within hours/days/weeks/etc.)?
   1. **The County’s interest is in a consumption model. The County seeks to rely on the recommendation of the awarded vendor for available capacity.**
2. Does the solution need to be able to burst within a 2-week notice?
   1. **As noted in Q54, the County does not expect significant bursting requirements. The County would be interested in understanding what capabilities the bidder’s solution can provide.**
3. Does the County currently have containerized applications? Are they 12-factor apps? Does the County require automatic bursting or do you want to monitor demand and manually increase resources?
   1. **The County currently does not have these use cases, but are interested in exploring this direction.**
4. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (7) states:

***Provisioning requirements that exceed the capabilities of the environment shall have a maximum of 2 weeks for delivery***

Can the County please clarify what are the units of scale; number of servers; TB or PB of storage?

* 1. **The County requests that the bidders let the County know what their units of scale can be in their proposals.**

1. Can the county please provide a list of servers that will be provisioned in the cloud environment including specifications for each server:

* vCPU count
* RAM capacity
* Local storage per server
* Storage IOPs per server
* NIC per server
* OS per server and version requirements
  1. **Bidders should clarify their solutions unit of scale in all areas.**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS/DELIVERABLES), item 1 (General), a (Common) (9) states:

***Persistent encryption for data at rest***

Is FIPS compliance required? If so, what level? External or onboard key management? Would a Local Key Manager in software be acceptable?

* 1. **The County does not have a known FIPS requirement at this time. Encryption for data at rest should be included in the bidder’s response.**

1. Are we missing a Compute Specific section? The following questions are all networking related:

* What is the vCPU to Core Oversubscription ratio?
* Is there a different oversubscription ratio for Critical Workloads?
* Are there any specific Clock Speed requirements for any applications (i.e. single threaded applications)?
* Are there any licensing restrictions or constraints around the number of cores for particular workloads (i.e. SQL/Oracle)?
  1. **The County does have specific requirements for the items. Bidder responses should clarify the capabilities of their solution. The County does have existing licensing capacities for OS and SQL, but are interested in resetting expectations to be in line with flexible consumption driven allocations.**

1. Can the County provide details on the minimum CPU and DRAM speed/family required?
   1. **No. The County would like to know what capabilities are included in the bidder’s response.**
2. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS), item b (Compute Specific) (4) states:

***Must have the ability to connect to at least 3 separate teamed networks in addition to the management connectivity***

Can the County please clarify what is a “teamed network”? Do they mean tagged VLANs?

* 1. **Teamed network as in two or more physical networks combined into a single virtual network adapter. For example, the County has a need for redundant connectivity into a DMZ VLAN, our private VLAN(s), and a DOJ VLAN. Each of them are physically separate in the County’s current network configurations, but going forward, the delivered solution should be able to attach to those networks while minimizing switches and switch port requirements. Not VLAN tagging.**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS), item b (Compute Specific) (3) states:

***Must have the ability to define resources classes and groups***

What is the context to which these resource classes and groups apply?

* 1. **This applies for the following:**
* **Grouping by distinct application systems**
* **Classification of technology stack tiers/roles (Web – intra/DMZ-inter, App Srv, DB Srv, etc.)**
* **Virtual security walls between groups, classes, and VM nodes**
* **RBAC controls by resource group, classes, and VM nodes**
* **Tenancy of customer resources having the above for their tenant space**

1. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS), item b (Compute Specific) (3) states:

***Must have the ability to load balance workloads within the virtualization environment***

Does this refer to load balancing across NICs (i.e. Load Based Teaming or Virtual Port ID in VMware or Active/Backup and Balance TCP in AHV) or is the RFP referring to Load Balancing like an F5Citrix NetScaler?

* 1. **The County has F5 systems which will load balance the entry traffic. The County is interested in the ability to dynamically load balance within the solution of the different classes/tech stack (i.e. web resources to app, app resources to db).**

1. Can the County please indicate what Application Lifecycle management tools are used?
   1. **The County is currently using SVN, Git, and Quest Stat!. The County has Jenkins, MicroFocus QC, MicroFocus UFT, MicroFocus LoadRunner (and other application testing solutions), and are in the process of implementing an Artifacts Repository. The County also uses Ansible for configuration management with our Linux systems.**
2. Is there currently Application management/ Virtual Server Management & monitoring?
   1. **Yes, but in a very limited capabilities so the County is interested in a more mature feature set to be included for the solution.**
3. What version of Hyper-V is the County running? What generation VMs does the County have and how many does the Countyhave of each?
   1. **The County is on Hyper-V 2016. The County is about 50-50 between generation 1 and generation 2 VMs.**
4. What are minimum compute/number of cores, RAM and storage capacities required of the compute environment?
   1. **Please see response to Q4.**
5. Please provide minimum storage capacities required of the submission for the on premise deployment? Are the minimum storage capacities raw, usable, or effective (with storage efficiencies enabled)?
   1. **Please see response to Q4. All storage is usable.**
6. What are the storage requirements for the Virtualized environment?
   1. **Please see response to Q4.**
7. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (1) states:

***Must have the ability to interoperate with existing Brocade Storage Area Network (SAN)***

Is the County requiring vendor’s solutions to interoperate with Brocade switches or other vendors’ storage behind the Brocade? Please clarify.

* 1. **The County’s preference is to ultimately not have a dedicated SAN, but while in transition and depending on the solution, may need to be able to interoperate with the SAN.**

1. Please provide a BoM of existing Fiber Channel devices. How are the currently deployed? Do you want the proposed compute to operate in parallel with your existing storage?
   1. **Two redundant fabrics of Brocade switches. The preference is to ultimately not need a SAN architecture.**
2. If this solution is replacing the current infrastructure then need to understand this aspect. Is this a “one time” or “permanent” requirement? \*\*. Is the new “replacement” system meant to live “alongside” the SAN and/or does it need to leverage the existing SAN, and if so, what is the requirement here?
   1. **This will be permanent to live alongside until migration of workloads is complete. Leveraging existing SAN would be of interest if it simplifies the migration of storage content.**
3. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (2) states:

***Must have support for storage QOS***

Can the County please provide their definition of QoS? Do you mean QoS thresholds for Minimum, Maximum, & Burst performance for workloads that can be adjusted on-the-fly/live with no disruption to performance, data access, or operations? Please clarify.

* 1. **Maximum thresholds without disruptions to other SLAs.**

1. What is the expected support SLA? 8x5, 24x7, etc.?
   1. **24x7 and bidders should clarify their support level SLAs (SEV1, SEV2, SEV3, etc.) in their proposal.**
2. Network integration occurs on the periphery of compute. What kinds of apps need to specify a QOS for network connectivity?
   1. **The County currently does not have a need for network QOS within its compute environment.**
3. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (4) states:

***Must have the ability to automatically move cold storage objects to the cloud***

Please clarify…”which” storage objects – Files, VMs, Object Storage? What type of policy needs to be in place and what happens when the file/vm/object is accessed, is a delay acceptable, or is it accessed from the cloud? Which clouds need to be supported and what type of cloud service – i.e. S3/Glacier/etc.?

* 1. **The initial idea on this was around files and their infrequency of access. How other objects can fit would be of interest to the County as well as best practice policies and accessibilities. The solution should be open to any public clouds certified for government use.**

1. If the County is looking to automatically archive files to Cloud Object Storage, are you also looking for COS pricing? What kinds of capacities are we looking at?
   1. **The County is interested in automatic capabilities but are open to other options. COS pricing would be good to know as an option. The County does not have any projections on capacity for this capability.**
2. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (5) states:

***Must include full NAS capabilities***

Please detail what functionalities are required to be compliant with what the County states are “full NAS capabilities”. What exactly, does this mean? Which protocols (and their versions), which features (Access Based Enumeration, File Extension masking, Windows Previous Versions support, etc.)?

* 1. **Please see detailed answer:**

1. **Centralized filer**
2. **Folder and file permissions management**
3. **Integrated with AD**
4. **Delegated management by tenancy**
5. **Ability to support multiple concurrent connections from a population of about 10,000 users**
6. **Snapshots**
7. **Replication**
8. **No operating system required**
9. **High availability**
10. **Scalable**
11. **Fault tolerant**
12. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (6) states:

***Must have NAS support for different file systems (NFS, NTFS/CIFS, APFS)***

What exactly is meant by APFS support? Only Macs can format an APFS file system and read/write to it (unless a driver is installed on a Windows System like Paragon to be able to read/write to the APFS volume).

* 1. **APFS support is not required.**

1. Do you have existing NAS devices you wish to use? Are there specific applications that can only use NAS storage?
   1. **No.**
2. Is the County looking for a system that is capable of offering both SAN and NAS capabilities across your data fabric?
   1. **Yes.**
3. Can the County indicate how many TB of SAN storage and how many TB of NAS storage?
   1. **Please see response to Q4.**
4. Can the County please clarify what group this service is for?  Functional use?  Which department?
   1. **The solution will be leveraged by ITD to be the central service provider to all County departments for any use case.**
5. Page 6 of the RFP, section D (SPECIFIC REQUIREMENTS), item b (Compute Specific) (9) states:

***Must have support for Small Computer System Interface (SCSI) boot volumes***

Can the County please clarify - is this specific to the VM or to the physical server?

* 1. **This is specific to VM.**

1. Is the County planning to reuse existing SCSI devices?
   1. **No.**
2. What is the use case for SCSI boot volumes? Is the County specifically look for Boot From SAN or are you looking for a Boot Optimized storage device?
   1. **The use case is for booting VMs.**
3. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (3b) states:

***Must have the ability to be partitioned based on Service Level Agreements (SLA)/Use case***

***Network Attached Storage (NAS)/Filer***

Is it required to have a single storage solution, or can multiple storage solutions be provided (Primary and Secondary storage)?

* 1. **The County does not have any specifics on this requirement. Only that from the administration/provisioning perspective, the physical state is transparent to the IT Department and our users.**

1. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (3c) states:

***Block/direct attached storage for Structured Query Language (SQL)***

Does the County have a requirement to support Raw Device Mapping for clustered applications? If so, please elaborate on the types of applications requiring this type of support.

* 1. **The County’s desire is to completely virtualize SQL and Raw Device Mapping capabilities will be an option the ITD are interested in exploring.**

1. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item c (Storage Specific) (4) states:

***Must have the ability to automatically move cold storage objects to the cloud***

Is the County looking for the public cloud provider to provide a tool that will age data and migrate it to the cloud?

* 1. **The preference would be that all administration be centralized, but ITD is open to these possibilities.**

1. Does ITD already have a tool that will be integrated into the proposed solution?
   1. **No.**
2. Does ITD want cold storage to go from on-prem to cloud, cloud to cloud or a mix of both?
   1. **Initially on-prem to cloud, but eventually it will be a mix of both.**
3. Is the County OK with AWS S3 being used for their cold storage target?
   1. **Yes.**
4. What type of NAS data is being moved over to the new environment? Example: video data and or compressed PDF’s, and pictures?
   1. **Files of all types.**
5. What protocols CIFS, SMB, NFS are needed to support the NAS?
   1. **All.**
6. Will the County need to migrate/move any of the current data residing on the current storage environment? If so what storage HW is in place today in regards to block, NAS and object?
   1. **The County currently runs Compellent SAN and Dell FS8600 NAS. The County does not anticipate moving all existing workloads into the new solution in the first year but instead gradually grow into it as we age out older hardware and upgrade older operating systems over a period of 3 to 5 years.**
7. What are the size requirements for the Block environment that will be connected through Fiber Channel?
   1. **The current footprint is an environment consisting of approximately 700 VMs, 250 standalone compute, 600TB of block storage split almost equally 3 ways between Compute, SQL, and NAS/filer.**
8. Does the solution need to include support for iSCSI protocol in addition to Fiber channel for SAN (Block) connectivity?
   1. **The County does not require FC connectivity to the existing SAN frabric or are we requiring iSCSI. We currently have a Brocade SAN and our preference is to ultimately eliminate the SAN fabric. The bidder should clarify their solution’s optimal storage connectivity type.**
9. What are the size requirements for the NAS/Filer portion?
   1. **The current footprint is an environment consisting of approximately 700 VMs, 250 standalone compute, 600TB of block storage split almost equally 3 ways between Compute, SQL, and NAS/filer.**
10. Does the solution need the ability to move cold data to the cloud for both block and file workloads?
    1. **The thought behind this was around files and their infrequency of access. How other objects can fit would be of interest to the ITD as well as best practice policies and accessibilities.**
11. What automation strategy do you have for migrating your infrastructure to the new environment?
    1. **There are no automation strategies at this time. The County is interested in the bidder’s proposed solutions in this area.**
12. Is the 150TB of NAS including file servers?
    1. **Please see response to Q4. We group file servers with NAS.**
13. Is the 100TB of block only tied to the SQL data?
    1. **No, SQL is a component of that 100TB.**
14. How many SQL servers does the County have and how many cores do you consume (vCPU and physical)?
    1. **Please see response to Q4.**
15. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item 2 (Availability Resiliency) (a) states:

***Must have the capacity to tolerate disruptions without affecting performance***

Can the County please clarify what scope of disruptions need to be tolerated? Loss of node? Loss of rack? Loss of entire site? N+1 or N+2 redundancy? Does this also include while performing maintenance activities like upgrades/hw replacement etc.?

* 1. **For this RFP, just the loss of node.**

1. Please describe power and cooling specifications for your existing data center. Do you have redundant egress for network connections? Do you require HA compute with an off-site hot backup? Do you require disaster recovery? What are your RTO and RPO?
   1. **The County has a single feed from the power company into its Oakland datacenter which is a 3 phase 480V with ground/neutral (Wye configuration) with a main 2000 amp breaker protecting the main panel buss bars (227V to ground/neutral). A UPS paired with a 750KW diesel generator having a combined diesel capacity of 3000 gallons provides protection from spikes and power loss. Cooling is maintained by 5 CRAC units keeping the datacenter at an average 68.5 degrees F and also relies on the datacenter UPS & diesel generator combination for backup power. Power and cooling requirements exceeding the existing capabilities should be called out in the vendor responses. The County has redundant egress for network connections. The County provisions compute with HA as the system design requirements call for it. The off-site backup is at Sonoma, which is leveraged as part of the County’s current disaster recovery solution. RTO and RPO requirements have not yet been defined.**
2. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item 2 (Availability Resiliency) (c) states:

***Must have the ability to easily migrate and/or replicate VMs to a public cloud and back on premise***

Does VM migration include automatic re-IP connectivity or assume stretched layer 2 network to ensure connectivity?

* 1. **The County is not expecting a stretched layer 2 network or automatic re-IP but is interested in options available.**

1. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item 2 (Availability Resiliency) (e) states:

***Must be capable of seamless migration of guests between hosts***

Can the County please define seamless? If VMs are migrated to cloud is “image conversation’ consider seamless?

* 1. **The statement does not apply to migration to cloud, only between on-prem infrastructure.**

1. What are your plans to migrate existing VMs to the new environment?
   1. **The County does not anticipate moving all existing workloads into the new solution in the first year but instead gradually grow into it as we age out older hardware and upgrade older operating systems over a period of 3 to 5 years.**
2. What professional services are required for migration?  Please provide details on any workload migration expectations.
   1. **Training is one of them, but the County will consider any migration services offered.**
3. Page 7 of the RFP, section D (SPECIFIC REQUIREMENTS), item 2 (Availability Resiliency) (f) states:

***Automatic conflicting host resolution of running VMs***

Can the County please clarify this requirement?

* 1. **VM affinity/anti-affinity (clustered VMs should not run on the same physical hosts, potentially resulting in a complete service outage if the physical host were to fail.**

1. Should orchestration software to move VM’s to the cloud or other data center be included into the solution?
   1. **The solution should have the ability to enable and use this capability when the County is ready.**
2. Will the County need to migrate/move any of the current VMs to the new environment? If so how many VMs, and the actual vCPU, RAM and storage capacity they is the County using?
   1. **Please see response to Q4.**
3. While it is understood that the vendor is responsible for the hardware management of the DC (patching, failure, capacity expansion etc.), what about the hypervisor and orchestration software? Is the vendor responsible for managing, patching, upgrades of the hypervisor and orchestration software?
   1. **Yes.**
4. Is the county OK with doing boot of the hypervisor on M.2 drives?
   1. **This question falls back on the bidders who would be providing physical support of the environment.**
5. Does the County have Hypervisor licensing? What licensing level do you have, if any?
   1. **Only as it comes with the County’s Data Center editions of Windows.**
6. What is the current on-premises Hypervisor?
   1. **Hyper-V.**
7. What version and release?
   1. **2016.**
8. Is there a Hypervisor preference?
   1. **No.**
9. Is the migration of the initial ~120 VMs and subsequent migrations the responsibility of the vendor? If not, what are the training/knowledge transfer expectations of AC to perform the aforementioned tasks?
   1. **The County is anticipating that the migration process will be handled by ITD. The County expects training and guidance using potential capabilities included that could be leveraged to facilitate or assist with the migration efforts.**
10. Is the County expectation that there will be no re-tooling or refactoring of workloads when moving to and from the cloud?
    1. **Yes, but the County is open to other options.**
11. Is the expectation that workloads will be migrated to the cloud without downtime (ie. live-migration)?
    1. **The County currently does not have any expectations to live migrate workloads into public clouds, but is open to having the ability to enable the capability in the future.**
12. What was the CPU, memory and storage (disk) footprint per VM?
    1. **This is not specified in the RFP. Bidders should take into account the County’s desire to move all compute into the final solution and as previously clarified. The compute environment will consist of system ranging from web servers to ERP classed database servers.**
13. Page 8 of the RFP, section D (SPECIFIC REQUIREMENTS), item 2 (Availability Resiliency) (g) states:

***Dynamic host balancing based on resource usage/availability***

Does this only apply to the physical hosts?

* 1. **Yes.**

1. Is the County also looking to create workload resiliency and using the virtual load balancer to balance the applications themselves?
   1. **Yes.**
2. How many physical sites are in scope?
   1. **The Oakland primary datacenter and the shared space at Sonoma County.**
3. Is this simply a load balancing technique requirement or is the County looking to more evenly distribute compute across resources?
   1. **The County is looking to have compute more evenly distributed across resources within a physical site.**
4. Page 8 of the RFP, section D (SPECIFIC REQUIREMENTS), item 3 (Manageability) (a) states:

***Centralized management console for all resources is preferred***

Will the solution be managed by County staff or is the County looking for the solution to be managed by onsite vendor resources?

* 1. **The County expects the back-end systems (physical hardware or otherwise, including hypervisor and orchestration/management software) to be managed/maintained by the vendor and we don’t expect any persistent onsite presence until there is required work to be done.**

1. Is the expectation that the same set of tools manages both the on premise/cloud environment leading to consistency of operations and management?
   1. **Yes.**
2. Is the County looking for a multi-cloud solution and the ability to integrate to more than one public cloud?
   1. **Yes.**
3. Page 8 of the RFP, section D (SPECIFIC REQUIREMENTS), item 3 (Manageability) (j) (Support tenancy for self-service provisioning and management of all resource types) (4) states:

***Integrated cloud consumption***

Can the County please clarify this requirement?

* 1. **Centralized management console for all resources so that at the time of provisioning, the process can be completed without having to separately log on to public cloud management consoles for the separate tasks.**

1. Page 9 of the RFP, section D (SPECIFIC REQUIREMENTS), item 4 (Analytics) (g) states:

***Ability to report Total Cost of Ownership (TCO) and Return on Investment (ROI)***

Can the County please clarify what is meant by TCO and ROI? Does the County mean the County wants to provide the cost of each workload in the environment? Or does the County mean the County wants to know the overall cost of the hybrid cloud at any given point?

* 1. **The County wants to accurately provide costs for each unit of workload in the environment factored from our overall cost of the environment, which also means we would know the overall cost of the environment at any given point.**

1. Page 9 of the RFP, section D (SPECIFIC REQUIREMENTS), item 4 (Analytics) (h) states:

***Ability to report SLA delivery***

How does the County define SLA? Is it simply uptime?

* 1. **Mainly uptime and performance where applicable.**

1. Page 9 of the RFP, section D (SPECIFIC REQUIREMENTS), item 5 (Procurement) (a) states:

***Flexibility with fixed purchasing or subscription/leased/consumption driven purchasing***

Can the county be more specific on their price consumption being requested? Is there a minimal amount of consumption needed? In what increments would you need to scale?

* 1. **Please see response to Q4. Bidders should clarify their solutions unit of scale in all areas**

1. Can the County clarify what is meant by “flexibility with fixed or consumption”?
   1. **The bidder’s ability to meet the preference for a procurement model driven by consumption of capacity.**
2. Page 9 of the RFP, section D (SPECIFIC REQUIREMENTS), item 6 (Training/Installation) (a&b) states:

***Self sufficiency training is to be included from solution vendor(s)***

***Vendor(s) will be responsible for implementing, maintaining, and evolving the proposed solution***

Is the County specifically seeking vendors for this requirement?

* 1. **No, only that any physical installation, initial setup/configuration, system administration training, and guidance on best practices be included.**

1. How many individuals will require training on the solution? Are you looking at formal class training, online or onsite?
   1. **Formal onsite on the new solution. Audience would be about 5-10 people with representation from sys admins, network admins, and security admins.**
2. How much involvement does the County want their staff to have vs the bidder? What would the County prefer the bidder do vs its own staff? For instance, does the County want to have bidder manage all underlying infrastructure while the staff maintains only the applications/workloads? Is the County open to suggestions?
   1. **The preference is that the bidder manages all underlying infrastructure while ITD staff maintains the application administration and workloads. Yes, the County is open to suggestions.**
3. For the implementation, will any data migrations be required or are they out of scope for this procurement?
   1. **The County does not expect staffing augmentation to be included and our preference is that the ITD team is trained up to administer the solution.**
4. Would a resident be acceptable in lieu of formal training?
   1. **The County does not expect staffing augmentation to be included and the preference is that the ITD team is trained up to administer the solution.**
5. When the County references vendors will be responsible for maintaining the solution does it simply mean that support hardware and software support must be included in the offer or is the County looking to have onsite residents manage and maintain the system? Please clarify.
   1. **Hardware and software support must be included. No onsite resident is expected more than managing change in the hardware infrastructure.**
6. Please clarify the role the vendor has in “evolving the proposed solution”?
   1. **The awarded bidder will be independently responsible for hardware refreshes as equipment ages.**
7. Does this include all day-to-day operational tasks? (eg. Provisioning VMs, deploying a volume, etc)?
   1. **No.**
8. Page 10 of the RFP, section D (SPECIFIC REQUIREMENTS), section 7 (Support), (a) states:

***Underlying infrastructure is completely managed and supported by vendor partner***

Can the County provide some clarification on the intent of this requirement? Is the County looking for a fully managed service to be proposed to support their infrastructure or is the County simply wanting to ensure the proposed solution includes hardware and software support provided by the OEM?

* 1. **The County is not looking for a fully managed service. The requirement only pertains to the underlying hardware.**

1. Page 10 of the RFP, section D (SPECIFIC REQUIREMENTS), section 7 (Support), (b) states:

***Aging hardware is resolved by the vendor and does not incur additional fiscal commitments***

Does the counties current network support software have defined networking?

* 1. **No.**

1. Is the county looking specifically for Software Defined Networking to be included into this RFP?
   1. **Full SDN is what the County would like to have within the virtualization environment**
2. Is it fair to assume that when the County references “aging hardware is resolved by the vendor” this does not apply to a fixed purchase solution and is directed at a consumption pricing model? Is the County looking for a fixed yearly cost with capacity growth adjustments payments vs outright purchase and upgrades?
   1. **The County is interested in consumption pricing.**
3. Page 10 of the RFP, section D (SPECIFIC REQUIREMENTS), Item 7 (Support) (c) states:

***All software/firmware is managed by the vendor and must be current with security and product updates***

Is this requirement referring to a cloud solution managed by cloud provider or is the County looking to ensure that the proposed solution includes software support for anything installed on premise?

* 1. **The latter, solution included software support for anything installed on premise.**

1. Page 10 of the RFP, section D (SPECIFIC REQUIREMENTS), Item 7 (Support) (d) states:

***Dedicated vendor Technology Asset Management (TAM) to assist with complete environment support***

The requirements state “complete environment support”. Does this only pertain to each vendor's proposed solution and not the County’s entire infrastructure? Can the County be more specific of what the County wants the TAM’s role to be? Will it extend beyond the completed install?

* 1. **It is with the proposed solution. The County does not need to be the only customer to the assigned TAM.**

1. How is the County requiring bids to be quoted = per Bb/Mo?
   1. **Bidders should clarify their solutions unit of scale in all areas.**
2. Page 11 of the RFP, section F (EVALUATION CRITERIA/SELECTION COMMITTEE) states:

***Bidders are advised that in the evaluation of cost it will be assumed that the unit price quoted is correct in the case of a discrepancy between the unit price and an extension.***

Can the County please clarify what is meant by “extension”?

* 1. **Extension means the total amount by multiplying the quantity and the unit price.**

1. Page 20 of the RFP, section L (PRICING), item 10 states:

***Prevailing Wages:  Pursuant to Labor Code Sections 1770 et seq., Contractor shall pay to persons performing labor in and about Work provided for in Contract not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for legal holiday and overtime work in said locality, which per diem wages shall not be less than the stipulated rates contained in a schedule thereof which has been ascertained and determined by the Director of the State Department of Industrial Relations to be the general prevailing rate of per diem wages for each craft or type of workman or mechanic needed to execute this contract.***

Is the County designating this a Public Works contract subject to California Labor Code section 1770? If yes, please identify what labor categories in-scope qualify.

* 1. **This project will not involve any construction that would designate this as a Public Works Contract subject to California Labor Code Section 1770.**

1. Page 8 of the Bid Response Packet, (Table of Key Personnel) states:

***Instructions: This page must be included as part of the Bid Response Packet. Following this page, Bidder shall provide a Table of Key Personnel. The table shall include all key personnel associated with the RFP.***

***This table must include all key personnel who will provide services to the County, including collaborating partners. The table must include the following information for each key person:***

1. ***The person’s relationship with Bidder, including job title and years of employment with Bidder;***
2. ***Work contact information including, but not limited to, the following: work address, office telephone number, mobile work number, and e-mail address;***
3. ***The role that the person will play in connection with the RFP;***
4. ***Educational background; and***
5. ***Related experience on similar projects, certifications, and merits.***

***Maximum Length: There is no limit to the table. There is, however, a 2-page limit per résumé or curriculum vitae.***

There was a 2-page limit per résumé specified, but there was no request that résumés be provided. Is it the intention that vendors provide résumés in addition to a completed Table of Key Personnel?

* 1. **The 2-page limit per résumé or curriculum vitae is set, should the bidder choose to attach a résumé for further information. A résumé is not required as long as the information requested for each Key Personnel is provided.**

1. Page 14 of the Bid Response Packet asks for references.  Will the County accept reference from a sub-contractor as well as the prime?
   1. **The County requires references be only for the prime bidder.**

The following participants attended the Networking/Bidders Conference and Vendor Outreach:

|  | **Company Name / Address** | **Representative** | **Contact Information** |
| --- | --- | --- | --- |
| 1. | **Century Link**  **1340 Treat Blvd.**  **Walnut Creek, CA 94597** | **Paul Zuniga** | Phone:  **(415) 412-2936** |
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| Certified SLEB: **No** |
| Subcontractor: |
| Certified SLEB: |

|  | | **Company Name / Address** | **Representative** | | **Contact Information** | |
| --- | --- | --- | --- | --- | --- | --- |
| 7. | | **Converge One**  **7031 Koll Center Parkway**  **Pleasanton, CA 94566** | **Adam Eisenberg** | | Phone:  **(818) 445-9142** | |
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| 8. | | **Nutanix**  **8101 McCormick Avenue**  **Oakland, CA 94605** | **Jeff Jennings** | | Phone: **(510) 882-6262** | |
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| 9. | | **IAS**  **1121 N. San Antonio Road**  **Suite D100**  **Palo Alto, CA 94303** | **Cliff Raynes** | | Phone:  **(650) 207-5478** | |
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| 10. | | **Insight**  **19800 MacArthur Blvd. Suite 1050**  **Irvine, CA 92612** | **Logan Malouf** | | Phone:  **(949) 242-7220** | |
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| 11. | | **Headlands Associates**  **1316 Piemonte Drive Suite 204**  **Pleasanton, CA 94566** | **Carl Wolfston** | | Phone: **(925) 484-4233** | |
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| 12. | | **VM Ware**  **3401 Hillview Avenue**  **Palo Alto, CA 94304** | **Dan Rozzano** | | Phone:  **(510) 304-7947** | |
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| 13. | | **Pure Storage**  **650 Castro Street**  **Mountain View, CA 94041** | **Ed Meran** | | Phone:  **(602) 999-8622** | |
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| 14. | **Microsoft**  **One Microsoft Way**  **Redmond, WA 98052** | | **Monica Hopelian** | Phone:  **(916) 369-3608** | |
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| 15. | **IBM**  **38 Hamilton Avenue**  **Kearny, NJ 07032** | | **Mitchell Hoch** | Phone: **(201) 241-0402** | |
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| 16. | **Dell EMC**  **5455 Great America Parkway**  **Santa Clara, CA 95054** | | **Vincent Galbreath** | Phone:  **(925) 308-3444** | |
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| 17. | **NTT**  **1004 Emory Drive**  **Claremont, CA 91711** | | **Murthy Karra** | Phone:  **(650) 567-3003** | |
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| 18. | **AWS**  **475 Sansome Street**  **San Francisco, CA 94111** | | **Scott Braley** | Phone: **(408) 821-4717** | |
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| 20. | **West Agile Labs**  **74 Tehama Street**  **San Francisco, CA** | | **Aaron Getta** | Phone:  **(415) 856-9290** | |
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| Certified SLEB: **n/a** | |

|  | **Company Name / Address** | **Representative** | **Contact Information** |
| --- | --- | --- | --- |
| 22. | **VM Ware**  **3401 Hillview Avenue**  **Palo Alto, CA 94301** | **Sunny Bhatia** | Phone:  **(510) 828-1247** |
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| Subcontractor: **No** |
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| Certified SLEB: **No** |
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|  |  |  |  |
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| Subcontractor: **No** |
| Certified SLEB: **No** |
| 32. | **IBM Corporation**  **1177 Beltline Road**  **Coppell, TX 75019** | **Valencia Guishard** | Phone:  **(972) 906-4532** |
| E-Mail: **valenica@us.ibm.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 33. | **NetApp**  **23276 Cypress Point Drive**  **Ripon, CA 95366** | **Peter Moreno** | Phone:  **(209) 275-0657** |
| E-Mail: **peter.moreno@netapp.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 34. | **Avanade**  **3015 235th Avenue SE**  **Sammamish, WA 98075** | **Sara Redler** | Phone: **(425) 577-8961** |
| E-Mail: **sara.redler@avanade.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 35. | **ENS**  **2881 Gold Tailings**  **Rancho Cordova 95760** | **Patrick Kirk** | Phone:  **(916) 768-0540** |
| E-Mail: **Pkirk@ens-inc.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 36. | **Rahi Systems**  **48303 Fremont Blvd.**  **Fremont, CA 94538** | **Brian Banks** | Phone:  **(510) 506-1643** |
| E-Mail: **brian.banks@rahisystems.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 37. | **IBM**  **2710-S Gateway Oaks Drive**  **Sacramento, CA 95833** | **Stephen Hamano** | Phone:  **(916) 529-1754** |
| E-Mail: **shamano@us.ibm.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |

|  | **Company Name / Address** | **Representative** | **Contact Information** |
| --- | --- | --- | --- |
| 38. | **NetApp**  **1016 Tailwood Drive**  **Waxhaw, NC 28173** | **Brian Wisniewski** | Phone:  **(571) 437-5460** |
| E-Mail: **brian3@netapp.com** |
| Prime Contractor: **No** |
| Subcontractor: **Yes** |
| Certified SLEB: **No** |
| 39. | **VMWare**  **2374 Saint Anton Drive**  **Lodi, CA 95242** | **James Newman** | Phone: **(209) 327-0145** |
| E-Mail: **jnewman@vmware.com** |
| Prime Contractor: **No** |
| Subcontractor: **Yes** |
| Certified SLEB: **No** |
| 40. | **Avanade**  **10105 SE 25th Street**  **Bellevue, WA 98004** | **Jarmo Paukkunen** | Phone:  **(425) 455-2210** |
| E-Mail: **jarmo.j.paukkunen@avanade.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 41. | **HPE 6280 America Center Drive**  **San Jose, CA 95002** | **Francisco Nares** | Phone:  **(408) 705-8537** |
| E-Mail:  **francisco.fer.nares@hpe.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 42. | **Red Hat**  **5409 Naaman Forest Blvd.**  **Garland, TX 75040** | **Sean Anderson** | Phone: (**469) 380-2187** |
| E-Mail: **seanders@redhat.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 43. | **Insight**  **6820 N. Harl Avenue**  **Tempe** | **Chris Boling** | Phone:  **(602) 885-8007** |
| E-Mail: **Chrisboling@insight.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 44. | **Converge One**  **747 Pierce Road Suite 2**  **Clifton Park, NY 12065** | **Mike McGuire** | Phone:  **(518) 406-0917** |
| E-Mail: **mmcguire@convergeone.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 45. | **Amazon Web Services**  **4250 Fairfax Drive**  **Arlington, VA 22182** | **Jason Mills** | Phone:  **(808) 223-0939** |
| E-Mail: **JJASMIL@amazon.com** |
| Prime Contractor: **No** |
| Subcontractor: **Yes** |
| Certified SLEB: **No** |

|  | **Company Name / Address** | **Representative** | **Contact Information** |
| --- | --- | --- | --- |
| 46. | **Red Hat**  **7250 Dallas Parkway**  **Plano, TX 75024** | **Nathan Goodnight** | Phone:  **(682) 760-0439** |
| E-Mail: **ngoodnig@redhat.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 47. | **Red Hat**  **1600 International Drive #800**  **McLean, VA 22102** | **Adam Watt** | Phone: (**571) 421-1891** |
| E-Mail: **awatt@redhat.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 48. | **Hewlett Packard Enterprise Company**  **6280 America Center Drive**  **Santa Clara, CA 95002** | **Carl Hartter** | Phone:  **(650) 269-2890** |
| E-Mail: **carl.hartter@hpe.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 49. | **Insight**  **10050 N. Wolfe Road Suite 281**  **Cupertino, CA 95014** | **Dwight Lovelace** | Phone:  **(925) 577-4818** |
| E-Mail: **dwight.lovelace@insight.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 50. | **Dell EMC**  **5480 Great America Parkway**  **Santa Clara, CA 94089** | **Carlos Richardson** | Phone: (**510) 459-0078** |
| E-Mail: **carlos.richardson@dell.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 51. | **VM Ware**  **4333 SE Crystal Springs Blvd.**  **Portland, OR 97206** | **Jason Franke** | Phone:  **(504) 504-4114** |
| E-Mail: **fjason@vmware.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 52. | **Dimension Data**  **4430 Rosewood Drive Suite 100**  **Pleasanton, CA 94588** | **Amber Beatty** | Phone:  **(925) 594-2315** |
| E-Mail: **amber.beatty@global.ntt** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 53. | **Presidio**  **114 Pacifica**  **Irvine, CA 92618** | **Tesfalem Gebremariam** | Phone:  **(949) 596-7784** |
| E-Mail: **tgebremariam@presidio.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |

|  | **Company Name / Address** | **Representative** | **Contact Information** |
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| 54. | **Dell**  **1 Dell Way**  **Round Rock, TX 78682** | **Jason Festich** | Phone:  **(805) 404-3695** |
| E-Mail: **jason\_festich@dell.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 55. | **Presidio**  **5000 Hopyard Road**  **Pleasanton, CA 94588** | **Dan Ornelas** | Phone: **(650) 906-4087** |
| E-Mail: **dornelas@presidio.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 56. | **Ens Inc.**  **1100 North Market**  **Sacramento, CA** | **Gary Lamb** | Phone:  **(203) 427-3181** |
| E-Mail: **glamb@ens-inc.com** |
| Prime Contractor: **Prime** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 57. | **Insight**  **18633 W. Williams Street**  **Goodyear, AZ 85338** | **Pete Gutwein** | Phone:  **(623) 363-3108** |
| E-Mail: **pete.gutwein@insight.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 58. | **IBM**  **1177 N. Beltline Road**  **Coppell, TX 75009** | **Charles Fitzgerald** | Phone: **(972) 740-3652** |
| E-Mail: **chfitzge@us.ibm.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 59. | **Century Link**  **2590 No. 1st Street #250**  **San Jose, CA 95131** | **Michael Cowburn** | Phone:  **(408) 202-0489** |
| E-Mail: **michael.cowburn@centurylink.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 60. | **Cisco**  **1180 Vista Lomas Lane**  **Corona, CA 92882** | **Stan Hulshof** | Phone: (**714) 813-0916** |
| E-Mail: **shulshof@cisco.com** |
| Prime Contractor: **No** |
| Subcontractor: **No** |
| Certified SLEB: **No** |

|  | **Company Name / Address** | **Representative** | **Contact Information** |
| --- | --- | --- | --- |
| 61. | **Hewlett Packard Enterprise**  **6443 S Wilson Street**  **Tempe, AZ 85283** | **Nancy Schwarz** | Phone:  **(480) 636-0267** |
| E-Mail: **nancy.schwarz@hpe.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |
| 62. | **ConvergeOne**  **371 W. Linden Drive**  **Orange, CA 92865** | **Kuljit Sangha** | Phone: (**949) 377-8754** |
| E-Mail: **ksangha@convergeone.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **Yes** |
| 63. | **IBM**  **3035 Cornwallis Road**  **Durham, NC 27705** | **Munish Gupta** | Phone:  **(919) 244-6397** |
| E-Mail: **munishg@us.ibm.com** |
| Prime Contractor: **Yes** |
| Subcontractor: **No** |
| Certified SLEB: **No** |

### EXHIBIT C

VENDOR LIST

RFP No. 901850

Hybrid Cloud Services

Below is the Vendor Bid List for this project consisting of vendors who have been issued a copy of this RFP/Q. This Vendor Bid List is being provided for informational purposes to assist bidders in making contact with other businesses as needed to develop local small and emerging business subcontracting relationships to meet the requirements of the Small Local Emerging Business (SLEB) Program: <http://www.acgov.org/gsa/departments/purchasing/policy/slebpref.htm>.

| **RFP No. 901850 Hybrid Cloud Services** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Business Name** | **Name** | **Phone** | **Address** | **City** | **ST.** | **Email** |
| Amazon Web Services | Jason Mills | (808) 223-0939 | 4250 Fairfax Drive | Arlington | VA | JJASMIL@amazon.com |
| Amzon Web Services | Scott Braley | (408) 821-4717 | 475 Sansome Street | San Francisco | CA | sbraley@amazon.com |
| Avanade | Sara Redler | (425) 577-8961 | 3015 235th Avenue SE | Sammamish | WA | sara.redler@avanade.com |
| Avanade | Jarmo Paukkunen | (425) 455-2210 | 10105 SE 25th Street | Bellevue | WA | jarmo.j.paukkunen@avanade.com |
| A&T Systems, Inc. | Robert Hooper | (301) 640-1720 | 12200 Tech Road, Ste 200 | Silver Spring | MD | robert.hooper@ats.com |
| Century Link | Paul Zuniga | (415) 412-2936 | 1340 Treat Blvd. | Walnut Creek | CA | paul.zuniga@centurylink.com |
| Century Link | Michael Cowburn | (408) 487-5626 | 2590 N. 1st Street | San Jose | CA | michael.cowburn@centurylink.com |
| Century Link | Michael Cowburn | (408) 202-0489 | 2590 No. 1st Street #250 | San Jose | CA | michael.cowburn@centurylink.com |
| Cherry Road Technologies | Tim Sexton | (571) 426-9824 | 6621 Electronic Drive | Springfield | VA | tsexton@cherryroad.com |
| Cisco | Jerry Piepmeier | (916) 752-6359 | 409 Baslow Court | Roseville | CA | Jepiepme@cisco.com |
| Cisco | Stan Hulshof | (714) 813-0916 | 1180 Vista Lomas Lane | Corona | CA | shulshof@cisco.com |
| Converge One | Adam Eisenberg | (818) 445-9142 | 7031 Koll Center Parkway | Pleasanton | CA | aeisenberg@convergeone.com |
| Converge One | Mike McGuire | (518) 406-0917 | 747 Pierce Road Suite 2 | Clifton | NJ | mmcguire@convergeone.com |
| ConvergeOne | Kuljit Sangha | (949) 377-8754 | 371 W. Linden Drive | Orange | CA | ksangha@convergeone.com |
| Dataendure | Gary Klausner | (415) 215-9047 | 1960 Zanker Road, Bldg. 10 | San Jose | CA | gklausner@dataendure.com |
| Dell | Jason Festich | (805) 404-3695 | 1 Dell Way | Round Rock | TX | jason\_festich@dell.com |
| Dell | Ben Dunning | (508) 958-4823 | 30 Castle Street | San Francisco | CA | Ben.dunning@dell.com |
| Dell EMC | Vincent Galbreath | (925) 308-3444 | 5455 Great America Parkway | Santa Clara | CA | Vincent.galbreath@dell.com |
| Dell EMC | Carlos Richardson | (510) 459-0078 | 5480 Great America Parkway | Santa Clara | CA | carlos.richardson@dell.com |
| Dimension Data | Amber Beatty | (925) 594-2315 | 4430 Rosewood Drive Suite 100 | Pleasanton | CA | amber.beatty@global.ntt |
| ENS | Don Michie | (916) 806-1668 | 2860 Gold Tailings Court | Rancho Cordova | CA | dmichie@ens-inc.com |
| ENS | Brian Banks | (510) 506-1643 | 48303 Fremont Blvd. | Fremont | CA | brian.banks@rahisystems.com |
| Ens Inc. | Gary Lamb | (203) 427-3181 | 1100 North Market | Sacramento | CA | glamb@ens-inc.com |
| Future Technologies Consulting Group | Bob Stoutenburgh | (770) 565-6888 | 847 Chestnut Lake Dr | Marietta | GA | bobstout@futuretech.com |
| Google Cloud | Andy Velasquez | (408) 460-0999 | 1600 Amphitheatre Parkway | Mountain View | CA | afvelasquez@google.com |
| Groupware Technology | Patrick Graham | (510) 599-2362 | 541 Division Street | Campbell | CA | pgraham@groupwaretech.com |
| Headlands Associates | Carl Wolfston | (925) 484-4233 | 1316 Piemonte Drive Suite 204 | Pleasanton | CA | wolfston@headlands.com |
| Hewlett Packard Enterprise | Nancy Schwarz | (480) 636-0267 | 6443 S Wilson Street | Tempe | AZ | nancy.schwarz@hpe.com |
| Hewlett Packard Enterprise Company | Carl Hartter | (650) 269-2890 | 6280 America Center Drive | Santa Clara | CA | carl.hartter@hpe.com |
| HPE | Francisco Nares | (408) 705-8537 | 6280 America Center Drive | San Jose | CA | francisco.fer.nares@hpe.com |
| IAS | Cliff Raynes | (650) 207-5478 | 1121 N. San Antonio Road Suite D100 | Palo Alto | CA | cliffr@archive.com |
| IBM | Mitchell Hoch | (201) 241-0402 | 38 Hamilton Avenue | Kearny | NJ | mitchell.hoch@ibm.com |
| IBM | Darius Terrell | (512) 695-2097 | 11501 Burnet Road | Austin | TX | dterrell@us.ibm.com |
| IBM | Chuck Strickland | (202) 731-0956 | 6710 Rockledge Drive | Bethesda | MD | cgstrick@us.ibm.com |
| IBM | Nancy Kastell | (916) 293-2715 | 2710 Gateway Oaks Suite 200 | Sacramento | CA | nlkastel@us.ibm.com |
| IBM | Valencia Guishard | (972) 906-4532 | 1177 Beltline Road | Coppell | TX | valenica@us.ibm.com |
| IBM | Stephen Hamano | (916) 529-1754 | 2710-S Gateway Oaks Drive | Sacramento | CA | shamano@us.ibm.com |
| IBM | Charles Fitzgerald | (972) 740-3652 | 1177 N. Beltline Road | Coppell | TX | chfitzge@us.ibm.com |
| IBM | Munish Gupta | (919) 244-6397 | 3035 Cornwallis Road | Durham | NC | munishg@us.ibm.com |
| Insight | Logan Malouf | (949) 242-7220 | 19800 MacArthur Blvd.Suite 1050 | Irvine | CA | logan.malouf@insight.com |
| Insight | Chris Boling | (602) 885-8007 | 6820 N. Harl Avenue | Tempe | AZ | Chrisboling@insight.com |
| Insight | Dwight Lovelace | (925) 577-4818 | 10050 N. Wolfe Road Suite 281 | Cupertino | CA | dwight.lovelace@insight.com |
| Insight | Pete Gutwein | (623) 363-3108 | 18633 W. Williams Street | Goodyear | AZ | pete.gutwein@insight.com |
| Microsoft | Monica Hopelian | (916) 369-3608 | One Microsoft Way | Redmond | WA | mohopeli@microsoft.com |
| NetApp | Jim Rehbein | (408) 497-0847 | 1395 Crossman Avenue | Sunnyvale | CA | jrehbein@netapp.com |
| NetApp | Peter Moreno | (209) 275-0657 | 23276 Cypress Point Drive | Ripon | CA | peter.moreno@netapp.com |
| NetApp | Brian Wisniewski | (571) 437-5460 | 1016 Tailwood Drive | Waxhaw | NC | brian3@netapp.com |
| NTT | Murthy Karra | (650) 567-3003 | 1004 Emory Drive | Claremont | CA | murthy.karra@global.ntt |
| Nutanix | Jeff Jennings | (510) 882-6262 | 8101 McCormick Avenue | Oakland | CA | jeff.jennings@nutanix.com |
| Presidio | Jitpah Saita | (650) 619-4718 | 5000 Hopyard Road | Pleasanton | CA | jsaita@presidio.com |
| Presidio | Hasan Mehdi | (510) 935-3511 | 5000 Hopyard Road | Pleasanton | CA | smehdi@presidio.com |
| Presidio | Tesfalem Gebremariam | (949) 596-7784 | 114 Pacifica | Irvine | CA | tgebremariam@presidio.com |
| Presidio | Dan Ornelas | (650) 906-4087 | 5000 Hopyard Road | Pleasanton | CA | dornelas@presidio.com |
| Pure Storage | Ed Meran | (602) 999-8622 | 650 Castro Street | Mountain View | CA | emeran@purestorage.com |
| Red Hat | Sean Anderson | (469) 380-2187 | 5409 Naaman Forest Blvd. | Garland | TX | seanders@redhat.com |
| Red Hat | Nathan Goodnight | (682) 760-0439 | 7250 Dallas Parkway | Plano | TX | ngoodnig@redhat.com |
| Red Hat | Adam Watt | (571) 421-1891 | 1600 International Drive #800 | McLean | VA | awatt@redhat.com |
| VM Ware | Dan Rozzano | (510) 304-7947 | 3401 Hillview Avenue | Palo Alto | CA | drozzano@vmware.com |
| VM Ware | Sunny Bhatia | (510) 828-1247 | 3401 Hillview Avenue | Palo Alto | CA | sbhatia@vmware.com |
| VM Ware | Jason Franke | (504) 504-4114 | 4333 SE Crystal Springs Blvd. | Portland | OR | fjason@vmware.com |
| VMWare | James Newman | (209) 327-0145 | 2374 Saint Anton Drive | Lodi | CA | jnewman@vmware.com |
| West Agile Labs | Aaron Getta | (415) 856-9290 | 74 Tehama Street | San Francisco | CA | aaron@westagilelabs.com |