I. Executive Summary
Superior Court of California, County of Orange (Court) is in the process of conducting a large enterprise hardware refresh. This refresh includes the procuring of licenses, hardware, implementation, and maintenance services for a combined integration of Cisco networking and servers that have NetApp storage to create a FlexPod environment.

A. Intended Court Use:
This particular environment will be a FlexPod for VMware vSphere, and as such will have VMware vSphere installed as the primary operating system to support multiple and simultaneous virtual machines and workloads. NetApp SnapManager Suite will be used to take application-consistent snapshots for Microsoft Exchange, Microsoft SQL Server, Microsoft SharePoint and VMware data.

II. Court to Provide:
A. A database to be used for VMware vCenter
B. Required Internet Protocols (IPs), Virtual Local Area Network (VLAN) information, naming conventions, network configuration information as determined during the final design sessions
C. VMware licensing from the VMware License Portal
D. Windows licensing and media (service license for vCenter, etc.)
E. Virtual Machine (VM) template from which Contractor and Court will deploy a limited quantity of test Virtual Machines

III. Contractor to Provide the Following Services:
Selected Contractor will perform installation and configuration of all purchased hardware and software including but not necessarily limited to:

A. Planning and Information Gathering
   1. Perform site readiness assessment ensuring hardware and environment is ready for project commencement
   2. Perform requirement gathering and final design sessions in preparation for writing deployment process guides
   3. Provide recommendations in a written report format for appropriate versions of major software/firmware (Cisco Unified Computing System hardware - UCS, NetApp ONTAP software, Cisco NX-OS software, VMware ESX software, etc.) for Court consideration and approval

B. Nexus Installation
   1. Rack and configure two (2) Nexus 5548UP switches
   2. Configure uplinks to existing Court switches
3. Provide documentation that fully describes configurations of Nexus switches providing all necessary information to restore configurations if lost.

4. Determine and enable all necessary and appropriate features and configurations such as Virtual Port Channel (VPC), Link Aggregation Control Protocol (LACP), Fibre Channel over Ethernet (FCoE), Secure Shell (SSH)

5. Configure peer-link and Virtual Port-Channel

6. Configure VLANs in accordance with existing Court infrastructure layouts and requirements (to be provided upon award).

7. Configure Virtual Storage Area Networks (VSANs) in accordance with Court requirements

C. Cisco Unified Computing System (UCS) Installation

1. Perform the physical installation, cabling, and labeling (in provided racks) of two (2) fabric Interconnects, three (3) chassis, and nineteen (19) B200 M3 blades

2. Perform the following initial setup steps via console cable
   a. Configure Fabric Interconnects as a cluster
   b. Assign Internet Protocols (IP's) to Fabric Interconnects and the cluster IP

3. Configure UCS wide policies and settings
   a. Global policies, port configurations, enabling Fibre Channel (FC) ports, equipment discovery

4. Determine whether an upgrade to a current version of UCS firmware code is needed and perform the upgrade as necessary
   a. Provide to Court a written report documenting the current version, whether an upgrade is needed, and if so, why an upgrade is needed

5. Develop and configure server policies and pools to best accommodate Intended Court Use

6. Develop and configure maintenance policies, host firmware policies, Universal Unique Identifier (UUID) pool, boot policies, Local Area Network (LAN) configuration to best accommodate Intended Court Use
   a. Develop and configure Media Access Control (MAC) address pools, VLANs, port channels, Local Area Network (LAN) pin groups, network control policies, Quality of Service (QoS) policies, virtual Network Interface Card (vNIC) templates, LAN connectivity policies, Kernel-based Virtual Machine (KVM) IPs

7. Configure SAN
   a. VSANs, World Wide Node Name (WWNN) pool, World Wide Port Name (WWPN) pools, SAN pin groups, virtual Host Bus Adapter (vHBA) templates

8. Create service profile template to best accommodate the Intended Court Use
   a. VMware ESX – Deploy the created service template to nineteen (19) VMware blade servers

9. Prepare zoning configuration for all deployed service profiles
10. Setup Cisco blades to perform FCoE boots from SAN
   a. Create and present a blank Logical Unit Numbers (LUNs) to use
   b. Install ESXi on each ESX service profile

D. NetApp Installation
   1. Rack and install two (2) NetApp FAS3250 controllers, seven (7) DS2246 shelves and two (2) DS4246 shelves at the Court’s Data Center in Irvine
   2. Execute setup script; Assign initial management IP
   3. Assign disks and layout aggregates
   4. Configure Flash Pools
   5. Determine if an upgrade of Data ONTAP is needed to achieve the Intended Court Use.
      a. If necessary, upgrade to a GA version of Data ONTAP
      b. Provide to Court a written report documenting the current version, whether an upgrade is needed, and if so, why an upgrade is needed
   6. Perform all necessary firmware updates
   7. Verify installed licenses
   8. Verify proper disk multipathing
   9. Setup Network Interface Groups, required VLANs and IPs
   10. Configure default volume settings
   11. Configure the Service Processor for out of band access
   12. Setup FC interfaces, configure FCoE
   14. Setup and demonstrate the functionality of AutoSupport is performing as expected and appropriately
   15. Join to Active Directory and configure Common Internet File System (CIFS)
   16. Create volume for VMware Network File System (NFS) datastore
   17. Advise Court on whether (and where) deduplication should be used and enable deduplication on SAN volumes agreed upon with Court by submitting a written report with corresponding explanation.
   18. Run NetApp’s ConfigAdvisor and save the output
   19. Demonstrate basic functionality and latest build of OnCommand System Manager is performing as expected and appropriately
   20. Create and present a blank LUN for use with FCoE boot from SAN on Cisco UCS servers

E. NetApp SnapManager
   1. Upgrade two (2) Microsoft Structured Query Language (MSSQL) servers running SnapManager for Structured Query Language (SQL) to the latest version of the NetApp branded software supporting Clustered Data ONTAP.
   2. Upgrade one (1) SnapManager for SharePoint environment
      a. Perform upgrade on four (4) servers running SnapManager for SharePoint to the latest version of the NetApp branded software supporting Clustered Data ONTAP.
i. Upgrade to include one (1) MSSQL server, one (1) App server, and two (2) Web Servers.

b. Upgrade to include all necessary Netapp required components for the SharePoint environment (Snapdrive, Snapmanager for SQL, etc.) in order to achieve the properly Intended Court Use.

3. Review data layouts to ensure they are configured according to SnapManager requirements documentation
   a. Inform Court if any data migration is necessary for proper configuration
   b. Provide to Court a written report documenting whether there is a need for data migration and the rationale supporting that determination.
   c. Provide to Court any and all necessary input and guidance to properly and effectively perform any necessary data migration.

4. Create new volumes on the new NetApp cluster for the server in compliance with NetApp best practices
   a. Use Virtual Storage Console (VSC) to create new Network File System (NFS) datastores

5. Migrate data from IBM N-Series to new NetApp cluster
   a. Shut down Virtual Machine
   b. Change Raw Device Mapping (RDM) from Physical Compatibility to Virtual
   c. Boot Virtual Machine
   d. Perform storage vMotion from Virtual RDM to NFS datastores

6. Upgrade software
   a. Upgrade SnapDrive for Windows to v7.0.x
   b. Upgrade SnapManager software (v7.0.x SQL v8.0.x SharePoint)
   c. Reboot VM

7. Validate existing SnapManager jobs to ensure functionality

F. VMWare Installation
1. Install virtualized vCenter server
2. Deploy nineteen (19) ESX hosts at the Court’s Data Center in Irvine
   a. Configure virtualized networking
      i. Configure Standard or Distributed Virtual Switching based on contractors recommendations
      ii. Configure virtual machine port groups based on the contractors recommendations
      iii. Configure VMKernel Network Interface Cards (NICs) for management, vMotion, and IP storage
   b. Mount initial datastores
   c. Configure Domain Name System (DNS), System Log (syslog), and Network Time Protocol (NTP)
3. Install VMware Update Manager, ensure hosts are fully patched and demonstrate functionality
4. Install NetApp’s Virtual Storage Console
a. Configure initial hosts according to best practices and demonstrate functionality
b. Configure cloning/provisioning features and demonstrate functionality
c. Configure Backup & Recovery for initial datastores and demonstrate functionality

G. NetApp Insight Balance Installation
1. Preparation Tasks
   a. Identify the equipment to be monitored and credentials for the equipment
   b. Identify mail server settings Simple Mail Transfer Protocol (SMTP) IP, credentials, from address, to address
   c. Determine where the Balance Open Virtual Applications (OVAs) should be deployed and what network it should be placed on based on network information provided by the Court upon award
2. Installation Tasks
   a. Install and configure the Insight Balance core application as an (Open Virtual Application) OVA
   b. Install and configure the Insight Balance Windows Proxy onto a Virtual Machine provided by the Court
   c. Register all supported storage controllers into Insight Balance
   d. Register all Virtual Centers into Balance
   e. Demonstrate that the registration of both physical and virtual machines is working properly by demonstrating it on the Virtual Storage Console.
   f. Provide an overview of core features of Insight Balance and show they are working properly by demonstrating it on the Virtual Storage Console.

H. Failover Testing
1. Perform failure testing within the system and provide a report of the results
2. Document the results of the testing providing (if applicable) thorough descriptions of any rules, exceptions, or specific issues which are preventing failover.

I. Documentation
1. Document the logical and physical configurations of the system providing thorough descriptions of the following information
   a. Physical Information - Including rack diagrams documenting ports, wiring, and connections
   b. Logical Network – Including server names, IP addresses, Firewalls, Transmission Control Protocol (TCP) /IP Ports
   c. Logical Fiber channel – Including zoning, World Wide Names (WWNs), and connections
2. Provide documented procedures followed during setup of all equipment. Documents should be specifically related to the installations performed for the Court. Documentation should be sufficiently thorough for Court to reproduce and replicate equipment setup if necessary.

IV. Cost

Contractors shall provide cost information by completing the table below indicating the estimated amount of time and cost of completing the project:

<table>
<thead>
<tr>
<th>Job Classification</th>
<th>Description of Work</th>
<th>Number of Hours</th>
<th>Cost Per Hour</th>
<th>Project Total Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All hardware and software for this project will be quoted independently of the installation and implementation work. Bidders must provide pricing information as requested in (i) Attachment A-1, Item List – Cisco Hardware, Software, and Support; (ii) Attachment A-2, Item List – Cisco Nexus Switches; (iii) Attachment A-3, Item List – NetApp Hardware, Software, and Support; (iv) Attachment A-4, Item List – VMware Upgrade, (v) Attachment A-5, Item List – Additional Required Items.

Furthermore, Bidders must provide a breakdown of all milestones in the implementation process and the corresponding cost of the completion of that milestone. Milestones will not be considered payable until the Milestone has been completed and accepted by way of a completed Acceptance and Sign-Off form. Any and all reports, demonstrations, and/or documentation should be treated as a Milestone and Deliverable under the Agreement.

V. Additional Hours (Time and Materials Basis)

<table>
<thead>
<tr>
<th>Job Classification</th>
<th>Hourly Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals:</td>
<td></td>
</tr>
</tbody>
</table>
VI. Minimum Required Certifications

- NetApp Authorized Professional Services Partner
- **Blade/Computing/Server Certifications** - Cisco Data Center Unified Computing
- **Network Specialization** - Cisco Advanced Data Center Architecture
- **Network Specialization** - Cisco Advanced Routing and Switching

*END OF ATTACHMENT A, SCOPE OF WORK – IMPLEMENTATION SERVICES*