

Statement of Work

HIGH PERFORMANCE COMPUTING SYSTEM ADMINISTRATOR IN SUPPORT OF THE DIGITAL EVALUATION AND EXPLOITATION RESEARCH GROUP AND NPS HIGH PERFORMANCE COMPUTING TEAM

Naval Postgraduate School

1.0 Background/Introduction

The Digital Evaluation and Exploitation (DEEP) Research Group at the Naval Postgraduate School (NPS) conducts research in digital data forensics. Their workforce is distributed between the NPS Monterey campus, and the NPS National Capitol Region (NCR) campus. The High Performance Computing (HPC) Team at NPS will be providing the overall management for this contract position, and the contractor will also support the HPC Team.

2.0 Scope

To provide support for the DEEP Research Group, including system architecture of data centers on both the east (NPS NCR) and west (NPS Monterey) coasts. The contractor should plan to be located at the Monterey campus, and be able to remotely support the servers and researchers in the NCR region. The contractor will also provide support to the NPS HPC Team.

The NPS Monterey data centers consist of the following components:

- Three physical servers running Redhat Enterprise Linux (RHEL);
- A NetApp Filer with ~100TB in Monterey connected to a Linux server by an SAS interface;
- Four physical servers running VMware vSphere ESXi 5.5 server;
- Shared ssh access to a supercomputer cluster (of CentOS nodes);
- Two copies of the Real Data Corpus (currently a 64 TB collection of data acquired for forensic research), one on the NetApp Filer and one in the supercomputer's storage array.
- A Hadoop Cluster with ~25 nodes;
- A High Performance Computing (HPC) cluster with ~60 nodes and 3,200 cores;

The NPS NCR data center consists of the following components:

- Two physical servers running VMware vSphere ESXi 5.5 server;

- Two Active Storage ActiveRAIDs at NPS NCR with ~100TB of storage each, connected to Linux server by a Fibre Channel interface;
- Two copies of the Real Data Corpus stored on the ActiveRAIDs.

Aspera (scp replacement) is used for high-speed file transfer from coast to coast.

3.0 Tasks

The contractor shall perform the following tasks:

- 3.1** Install, reinstall, update, and upgrade operating systems on servers as necessary.
- 3.2** Implement a backup system for configuration and user data.
- 3.3** Implement a system for assuring a consistent server run-time environment.
- 3.4** Set up DHCP and NAT for test network.
- 3.5** Configure Apache web servers.
- 3.6** Implement, deploy, maintain, and troubleshoot Hadoop and or Apache Spark.
- 3.7** Implement, deploy, maintain, and troubleshoot vSphere ESXi server.
- 3.8** Support Windows 7 and 8, and Windows Server 2008 and 2012 operating systems.
- 3.9** Respond to user requests for assistance: This can range from simple questions, such as how to login to a machine and compile a program, to much more complex assistance, such as installing specialized software or assistance with improving the performance of a computer program.
- 3.10** Administer Linux systems running Redhat Enterprise Linux (RHEL) or CentOS, including installing and configuring workstations and Linux servers and deploying and managing monitoring solutions such as OpenNMS.
- 3.11** Administer IPA, Mailman, Apache, Subversion Repository, Subversion Client, Git Repository, Git Client, NFS, LDAP client, MediaWiki, MySQL and Kerberos.
- 3.12** Administer a Linux network, including configuring IPv4 and IPv6 addresses, editing firewall rules (e.g., iptables), and configuring Network Address Translation.
- 3.13** Perform Basic PKI administration tasks, including creating and updating SSL certificates.
- 3.14** Troubleshoot existing Python and BASH scripts and be able to extend them with new functionality as needed.
- 3.15** Download and install open source software using yum and rpm.
- 3.16** Download and install open source software for which packages have not yet been created (e.g., “tarballs”).
- 3.17** Create rpms from source as necessary.

4.0 Deliverables

The contractor shall be responsible for preparing deliverables in support of the tasks identified in this SOW.

Task	What will be inspected	Acceptable Quality Level (AQL)	Method	Frequency
3.1	Updates provided at weekly team meetings and via email.	Summary of work completed during month due by COB last day of month.	Personal observation at NPS.	Monthly.
3.2	Archive/Backup System.	Archive/Backup System must be available to end user. Test system weekly to ensure data can be stored and retrieved.	Personal observation at NPS.	Weekly.
3.3	File system.	File system must be available to end-user. Repairs are made to the system when notified of problems.	Personal observation at NPS.	Continuously.
3.4, 3.12	Network.	Networks must be set up with required topology and machines on the networks must maintain connectivity. Repairs are made to the system when notified of problems.	Personal observation at NPS.	Continuously.
3.5, 3.11	Web servers, wiki, and other services	Must be properly configured and kept online such that served content remains available. Repairs are made to the system when notified of problems.	Personal observation at NPS.	Continuously.
3.6	Hadoop / Apache Spark	Must be installed and made available to the end user. Repairs are made to the system when notified of problems.	Personal observation at NPS.	Continuously.
3.7	vSphere ESXi Server	Must be installed and made available to the end user. Repairs are made to the system when notified of problems.	Personal observation at NPS.	Continuously.

3.8, 3.10- 3.11	Applications, operating system, and other software, and warranty information.	All are in conformance with ITACS IA policies and available to users.	Personal observation at NPS.	Continuously.
3.9, 3.14- 3.17	Resolution of requests.	Use of JIRA system to track requests and prioritize and track so that team can monitor.	Feedback from users.	Continuously.
3.13	SSL Certificates.	Must be created and kept up to date.	Personal observation at NPS.	Continuously.

The surveillance method for the deliverables listed above will be personal observation at NPS. If performance falls below the AQL defined above, the Contracting Officer's Representative (COR) shall document the instance(s), coordinate with the Contracting Officer and advise the Contractor. The Contractor will be requested to review the documentation and provide a written response on how performance will be corrected in the future. Re-performance of any work for failure to perform in accordance with the specified AQL or task requirement shall be completed at the Contractor's own expense and at no additional cost to the Government.

5.0 Period of Performance 15-Aug-2015 to 14 Aug 2016.

6.0 Place of Performance Work is done primarily onsite at the Naval Postgraduate School, but some work may be conducted offsite at the discretion of the COR.

7.0 Work Week and Hours of Operation:

The Contractor shall provide services during normal working hours excluding federal holidays. Normal working hours are 0800-1700, Monday through Friday, unless requirements dictate otherwise.

Work required on-site at NPS shall be performed by the Contractor, as required.

Following is a list of holidays observed by the Government.

<u>Name of Holiday</u>	<u>Time of Observance</u>
New Year's Day	1 January
Martin Luther King Jr. Day	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	4 July
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veteran's Day	11 November
Thanksgiving Day	Fourth Thursday in November
Christmas Day	25 December

If any of the above holidays occur on a Saturday or a Sunday, then such holiday shall be observed by the Contractor in accordance with the practice as observed by the assigned Government employees at the using activity.

8.0 Transition Plan:

To minimize any decreases in productivity and to prevent possible negative impacts on additional services, the contractor shall propose a draft Transition Plan and present a finalized Transition Plan for the migration of current systems and operations 60 days prior to the expiration of the contract. The contractor shall facilitate the accomplishment of a seamless transition from the incumbent to an incoming contractor /government personnel at the expiration of the contract. The contractor shall identify how it will coordinate with the incoming contractor and/or Government personnel to transfer knowledge regarding the following:

- Project management processes
- Points of contact
- Location of technical and project management documentation
- Status of ongoing technical initiatives
- Appropriate contractor to contractor coordination to ensure a seamless transition
- Transition of key personnel
- Identify schedules and milestones
- Identify actions required of the Government,
- Establish and maintain effective communication with the incoming contractor/ Government personnel for the period of the transition via weekly status meetings.

9.0 Government Furnished Property The government shall provide appropriate office space, supplies and equipment to perform tasks at NPS. Any Government-provided property and information shall be used for official Government business only. Any applicable documents that are authorized for use in performance of these services shall be provided, in accordance with security and contract terms and conditions.

10.0Travel No travel is anticipated or budgeted for at this time, but there may be circumstances where travel may be required. All travel will be reimbursed in accordance with the Joint Travel Regulations, if travel becomes necessary.

11.0 Classification Unclassified, with an Information Assurance ITA/ Sensitivity Level of “IT-II / Non-critical Sensitive”

12.0 Privacy Act Statement

“Pursuant to Title 5 United States Code 552a(m)(1), the contractor and all employees of the contractor working under this contract are required to comply with the requirements of 5 U.S.C. 552a (“The Privacy Act of 1974”).”

13.0 Contractor Identification

In accordance with DFAR 211.106, there shall be a clear distinction between Government employees and service contractor employees. Service contractor employees shall identify themselves as contractor personnel by introducing themselves or being introduced as contractor personnel and displaying distinguishing badges or other visible identification for meetings with Government personnel. In addition, contractor personnel shall appropriately identify themselves as contractor employees in telephone conversations and in formal and informal written correspondence.

14.0 Non-Personal Services Statement

Contractor employees performing services under this order will be controlled, directed, and supervised at all times by management personnel of the contractor. Contractor management will insure that employees properly comply with the performance work standards outlined in the SOW. Contractor employees will perform their duties independent of, and without the supervision of, any Government official or other Defense Contractor. The tasks, duties, and responsibilities set forth in the task order may not be interpreted or implemented in any manner that results in any contractor employee creating or modifying Federal policy, obligating the appropriated funds of the United States Government, overseeing the work of Federal employees, or otherwise violating the prohibitions set forth in Parts 7.5 and 37.1 of the Federal Acquisition Regulation (FAR). The Government will control access to the facility and will perform the inspection and acceptance of the completed work.

15.0 Invoice Schedule

Contractor may invoice monthly in arrears.

Invoices shall be submitted once a month for services rendered and travel performed during the previous month. All invoices need to be submitted electronically via WAWF. Hard copy invoices cannot be accepted. Only one invoice may be submitted per month. Invoices must identify the invoicing period. If charges against more than one line item have occurred during the invoicing period, all charges must be combined into one invoice. If invoicing against travel, the invoice must contain a summary detailing the charges as well as an attachment of supporting documentation. The contractor's failure to include the necessary information or a more frequent invoice submission than authorized will result in invoices being rejected.