COMPUTER SCIENCE DEPARTMENT INSTRUCTION 5230

From: Chair, Computer Science Department

Subj: RESPONSIBILITIES OF A COMPUTER SCIENCE DEPARTMENT SYSTEMS ADMINISTRATOR

Encl: (1) List of Responsibilities of a Computer Science Department Systems Administrator
(2) Example Activities of a Computer Science Department Systems Administrator

1. Purpose. To delineate the responsibilities of a Computer Science (CS) Department Systems Administrator (SysAdmin). This instruction does not supplant but supplements applicable rules, regulations and instructions formally promulgated by the US Naval Academy and the Information Technology Services Division.

2. Action. CS Department PC and UNIX Systems Administrators are responsible for timely support of the respective department PC and UNIX Systems, executing the duties typically performed by a SysAdmin. Enclosure (1) amplifies or adds to those typical SysAdmin duties, as pertains to the CS Department. Enclosure (2) gives a list of example activities historically accomplished by CS Department SysAdmin. These and similar activities are expected to be accomplished in the future.

3. Revision. This instruction shall be reviewed annually by the Systems Committee Chair.

K.G. SCHULZE

List of Responsibilities of a Computer Science Department Systems Administrator

1. Coordinate with and assist other Administrators in performing **support** activities.

   Support is any **configuration or administrative support.**

   Configuration support is defined as **PC or UNIX system** installation, removal, or update.

   Administrative support is defined as PC or UNIX system receipt by purchase or transfer, relocation, or transfer to excess; creation, deletion or disabling of accounts, collection of logs, liaison with vendors.

   The *PC system* is **computing infrastructure** associated with a Microsoft operating system.

   The *UNIX system* is computing infrastructure associated with a UNIX-derived operating system (e.g., Solaris, Linux).

   Computing infrastructure is the **hardware**, **ancillary equipment**, **software** and **data** located in Computer Science Department cognizant spaces that supports the Computer Science Department Mission and general computing needs associated with faculty research.

   Hardware is defined as:
   a. Computing devices such as workstations, servers, desktops, laptops, tablets, PDA.
   b. Input devices such as keyboards, mice, trackballs.
   c. Output devices such as displays, printers, speakers.
   d. Storage devices such as tape units, external hard disks.
   e. Network devices such as routers, switches, hubs, access points.
   f. Power devices such as UPS, docking stations.

   Ancillary equipment is defined as:
   a. Cabling and connectors required for hardware operation, such as power strips and transformers.
   b. Miscellaneous items such as racks, enclosures, tools, locks, adapters, etc.

   Software is defined as:
   a. Operating systems, including drivers and patches.
   b. Applications or utilities, including patches and updates.
   c. Scripts.

   Data is defined as:
   a. Non-executable files needed for the proper operation of other software and hardware (e.g., configuration files).
   b. Databases, including mail distribution and alias lists.
   c. Records stored in electronic form (e.g., inventories, logs).

Enclosure (1)

List of Responsibilities of a Computer Science Department Systems Administrator

2. Respond in a timely manner to requests for support made by CS Department faculty and staff.

3. Evaluate the impact of changes to the computing infrastructure prior to effecting them.

4. Remain appraised of system operational status; make available a daily summary of operational status (for example, via a physical status board or a web status page).

5. Maintain accounts.

    1. Obtain approval for accounts including Linux.
    2. Create and delete student and faculty accounts.
    3. Inform prospective account holders of the acceptable use policy and obtain written acknowledgement of their understanding and acceptance, prior to their use of an account.

6. Maintain an accurate inventory of hardware and software.

7. Document, troubleshoot and resolve all computing problems.

8. Restore data from backup as requested. Backup user data in active accounts, administrative databases, and Department web pages and ABET databases according to the following schedule (as holiday/leave allows):

    a. One week of daily (Mon-Thu).
    b. One month of weekly (Fri).
    c. One year of monthly (on or about the first of the month).
    d. Three years of annual (end of Spring semester).

9. Monitor and maintain operational security in accordance with established requirements.

    a. Monitor activity (daily).
    b. Disable and report accounts in which non-secure, malicious or suspicious activity is detected (immediately).

10. Monitor and maintain the physical security of spaces in which computing infrastructure is located, including offices, labs, storage rooms and server rooms.

11. Monitor the environmental status of CS Department cognizant labs, server rooms and workrooms, to include temperature, humidity, and air flow. Coordinate with the building 1st Lieutenant and Public Works to resolve issues.

List of Responsibilities of a Computer Science Department Systems Administrator

12. Ensure adherence to all hardware and software license agreements.

13. Participate in life-cycle management of the computing infrastructure.
    a. Make informed recommendations with respect to acquisition, including hardware, software, licensing and maintenance agreements.
    b. Obtain vendor quotes.
    c. Make recommendations with respect to asset deployment.
    d. Dispose of excess computing infrastructure no less frequently than annually.

14. Attend meetings of the Systems Committee.

15. Set up computing infrastructure as needed to support periodic events such as the Plebe Majors Brief, Plebe Parents Weekend, CS Department Open House, the CDX and Summer Seminar.

16. Maintain an adequate supply of writable media for faculty and staff use (e.g., CD, DVD). Submit requests for purchase as needed.

17. Keep printers supplied with toner and paper (daily).

18. Serve as POC with ITSD concerning telephone service.

19. Document support activities to facilitate turnover of responsibilities and to maintain an infrastructure history.

20. Prepare and submit reports to the Department Systems Committee Chair, including the following:

    a. Weekly:
        1. Operational status of all hardware, including a listing of each component not in full operation, and action taken to restore it to full service.
        2. Activity occurring in the previous week:
            i.   Configuration changes.
            ii. Backups and restorations performed.
            iii. Computing infrastructure received by purchase or transfer but pending action.
            iv. Computing infrastructure excessed.
            v.   Other administrative activities.
            vi. Configuration changes planned for the current week, month, and semester.

    b. Summer, due 15 May: Plans for support activity that will take place during the summer session.

    c. Annually, due 15 August:
        1. Summarize all major systems administration activity during the previous year.
        2. Inventory of the computing infrastructure.

    d. As needed by the Systems Committee Chair.

Example Activities of a Computer Science Department Systems Administrator

Summer

- Receive, unpack, relocate and setup a new PC or UNIX lab in its entirety. Package and ship equipment required to be returned to a vendor.
- Configure and install new load images for **all** PC replaced by ASDP (lab, classroom, workroom, SysAdmin, faculty, and staff).

Prior to the semester when needed:

- Create PC and UNIX accounts and allocate disk space for all students taking CS/IT courses.
- Create student accounts on the Web server to support specific courses.
- Create student accounts on the Database server to support specific courses.
- Make recommendations with respect to faculty Sun workstation deployment taking into account assets and course requirements.
- Obtain "excess" PC for use in the Architecture course.

As needed:

- Assist the Department "webmaster".
- Create "How-To" guides (e.g: using the scanner, mapping a network drive).
- Install OS/software patches/updates as they become available.
- Reconfigure network labs as needed.
- Assist faculty with special needs such as setups/configurations for Information Assurance, Database, Web, and Networks courses.
  Examples: set up local Admin accounts for students on "sandbox" hosts,
  copy VMware images to hosts and verify correct setup.

Other desirable knowledge and skills:

- Be able to write shell scripts.
- Be familiar with SQL, PHP, mySQL