CariCOOS Computational Facilities

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LONG-TERM GOALS
Improve current CariCOOS systems infrastructure operations and maximization of resources. Emphasis on the transition to Cloud computing as Primary and maintaining an on premise Backup/Secondary site at the UPRM IT Data Center for redundancy and availability.

MILESTONES / OBJECTIVES
The following objectives are intended to provide a map of CariCOOS current systems infrastructure and how the systems interacts with other systems and their dependencies.

I. Document current computers and server infrastructure.
    a. Location, labeling/identification, operating system installed and network configuration.
    b. Identify process and tasks that are running under each system and their schedule.
    c. Classify each system by category (production, development, testing, others) and identify level of required availability (high, medium, low, very low).
    d. Users and access privilege by system.
    e. Identify migration schedule of systems to AWS and/or migration to UPRM IT Data Center at Monzón Building.
    f. Maintain redundant (Primary and Secondary) server configuration in sync.

II. Document current network and configuration.
    a. Switch, wireless, ports, network and VLAN configuration.
    b. Users and access privilege – Contact Person.
    c. Isolate administrative user's network from production network.
    d. Standardize network configuration among sites.
    e. Identify TCP/IP ports in use by system.
    f. Organize and identify cables.

III. Centralized servers and network monitoring.
    a. Monitor system availability.
    b. Traffic (Upload, Download, Utilization).
    c. Low Space Volume Conditions.
    d. System Utilization.
    e. Other Variables.

IV. Relocation to UPRM IT Data Center.
    a. Some systems can be identified and installed at the UPRM Data Center.
    b. Space, power, air conditioning, controlled access and power generator is available for possible power failure.
    c. Can provide virtual machine. (ex. Windows 7 for wind station software)

    d. Network connectivity capacity.
    e. At the moment there is no recurrent cost involved for the space and virtual machines.
    f. The possibility of becoming CariCOOS Backup/Secondary Site.

V. Improve inventory management.
    a. New equipment.
    b. Decommissioned equipment.
    c. Existing Equipment.
    d. Assigned equipment (assigned user).
    e. Transferred equipment.

WORK COMPLETED

- General maintenance of HR Radar cabinets (locks, doors, ac filter, cable management & organization), internal and external network connectivity (routers & remote access).
- Purchase and coordinate Web Power Switch at all Codar sites.
- Equipment diagram and identification of CID and Magueyes Racks.
- Designed a Server and Service/Product Matrix Report.
- Matlab R2016a has been standardize on varoious production servers.
- Day to day support activities for printers, computers, servers, connectivity issues, ups battery issues, upgrades, quotes and purchasing request, metereologist stations conectivity, studends and CariCOOS personnel.

MAJOR OUTCOMES

- Configuration of dbfeed (1st AWS) server.
- Migration of database and scripts for Main Web Page.
- Setup and transition of HF Radars data repository to AWS.
- Design, setup and configuration of networking and equipment for CariCOOS office at CID 114.
- Support on Thredds migration to Cloud computing.

RELATED PROJECTS

None.

WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (Dec. 1 – May 31 2017)

I. Document current computers and server infrastructure – Create and maintain electronic documentation including offsite and cloud. On going process.
II. Document current network and configuration - Create and maintain electronic documentation including offsite and cloud. On going process.
III. Centralized servers and network monitoring – schedule implementation during Qtr 3 and Qtr 4.
IV. Relocation to UPRM IT Data Center – Secondary/Backup Site
    a. Equipment relocation from CID to Monzón is expected before the end of December. Material has been purchased, waiting on power circuit installation.
    b. Complete transfer of identified equipment from Magueyes is expected by Qtr 3.
V. Improve inventory management – On going process.
VI. Continue the support and collaboration on DMAC initiatives and evaluate attendance to the IOOS DMAC Meeting in March.

VII.   Continue improving knowledge on AWS cloud computing as well as HPC cloud computing.

VIII. Continue supporting on new HF Radar installation, configuration for computer and equipment adquisition.

IX.   Continue improving my knowledge on CariCOOS systems and process.

X.   Day to day operation.