

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. – **On-Going**
 - 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. – **On-Going**
 - 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. – **On-Going**
 - 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 - **Currently On Hold.**
 - 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. – **On-Going**
- 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.
- Matlab R2016a has been standardize on varoious production servers.
- Day to day maintenance and support activities for printers, computers, servers, connectivity issues, ups battery issues, upgrades, quotes and purchasing request, metereologist stations conectivity, studends and CariCOOS personnel.
- **Research and develop a Survey Poll as an option for an electronic voting solution for the selection of CariCOOS Board members.**
- **Remotely attendance to the IOOS DMAC Meeting in March after flight were cancelled due to bad weather.**

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.
- Equipment diagram and identification of CID and Magueyes Racks.
- Designed a Server and Service/Product Matrix Report.
- **Network documentation including VLAN, TCP/IP network subnets and switches configuration for CID and Magueyes.**
- **Installation and configuration of our 1st HPC instance for FVCOM in AWS.**
- **Installation of Network Monitoring System is currently being tested.**
- **Colaborate in the migration of Buoys Tweets script to AWS.**
- **Setup and Migration of Codar Radials Repository to AWS.**

RELATED PROJECTS

None.

WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (FY2017)

- I. Collaborate as a DMAC team member in the preparation for the CariCOOS IOOS-DMAC review in June.

- II. Computers and Server Infrastructure Documentation– Maintain electronic documentation including offsite and cloud. On going process.
- III. Network Infrastructure Documentation - Maintain electronic documentation including offsite and cloud. On going process.
- IV. Centralized servers and network monitoring – Continue deployment of additional systems to be monitor.
- V. Relocation to UPRM IT Data Center – Secondary/Backup Site
 - a. Equipment relocation from CID to Monzón is On Hold. Material has been purchased, waiting on electric circuit installation and an Asbestos Removal Plan from the UPRM-CTI.
- VI. Improve inventory management – On going process.
- VII. Continue the support and collaboration on DMAC initiatives and evaluate attendance to the IOOS DMAC Meeting for FY2017.
- VIII. Continue improving knowledge on AWS cloud computing, management, maintenance and performance.
- IX. Continue supporting HF Radar installation, configuration for computer and equipment adquisition.
- X. Continue improving my knowledge on CariCOOS systems and process.
- XI. Continue my participation in UPRM-CTI group meetings as a liason between CariCOOS and UPRM.
- XII. Day to day operation.