

Desktop Network Services Annual Report 2004-2005

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Desktop Network Services serves the staff of the University of Hawai'i at Manoa Library by maintaining the Library's staff application and print servers, wired and wireless network and all desktop computing and printing resources. The department provides hardware, software, network/datacomm; and digitizing support, consultation and research services and manages the Library's proxy server, web servers and general library pages, and assists departments who maintain their web pages.

Major Functions Performed by the Department in 2004-2005:

• RECOVERED FROM FLOOD

Note: while it may seem that such recovery work should be a short, finite and relatively simple task - it is none of that. The infrastructure of servers, network connections, staff and public PC installations that existed before the flood were built over the span of many years and by many staff and student assistants. Recovery does not consist of "just" buying new hardware, plugging it in, loading up a backup tape or files and getting back to "normal". The destroyed servers and network infrastructure provided an extensive array of functions and operations support. Staff re- and dislocations, new hardware operating systems and temporary "computer room" locations scattered in 2 separate building are just some of the factors that make disaster recovery a lengthy and ongoing and complex task.

Major Functions Performed by the Department (continued)

- Planned and implemented RAM and Operating System upgrades of public PCs, regrouped PCs by hardware type to improve support and troubleshooting
- Worked with ITS to support installation of Hamilton CLIC lab
- Installed patch (March) and Unicode version (May) of Endeavor Voyager client-side software
- Consulted with Library staff and Admin to determine computing hardware/software needs to spend DISASTER funds
- Upgraded servers and server-based software used library-wide
- Responded to WWW virus and email worm attacks, maintained firewall anti-virus software
- Expanded, reconfigured and managed UH Manoa Library data communications network infrastructure
- Recreated, restored and revised UH Manoa Library web pages, planned and began implementation of expanded intranet for disaster recovery information and projects
- Supported digitization initiatives and projects.

Personnel:

The department operated with a permanent staff of 4 positions and 1 temporary position:

- Martha Chantiny, Department Chair, Librarian IV
- Wayne Agunat, Microcomputer Support IT Specialist
- Tom Ishimitsu, Network Support IT Specialist
- Wing Leung, Server Support IT Specialist

In addition, a temporary position has been filled as follows:

- Beth Tillinghast, Web Support, Librarian II [temporary appointment through July 31, 2007]

Sunny Pai and Wilbur Wong were hired on 12-18 month contracts in June 2005 to assist in flood disaster related recovery efforts. The department also employs student assistants who perform microcomputer and network support tasks, ranging in number from 4 to a peak of 6 individuals working approximately 12-15 hours each during the school year, i.e. approximately 1.5-3 FTE. In addition, 1 student assistant works approximately 15 hours a week to perform web and digitizing project support.

Workload:

Requests for Desktop Network Services assistance have been received primarily via electronic mail, and also by telephone and in person. Department staff responded to requests for assistance in Hamilton and Sinclair Library as well as the Jefferson Annex. Last year there was a major jump in the number of emails exchanged concerning price requests, bid specifications and status after the switch to electronic quote and purchase order systems. To address the growing issue of tracking of work done by students on the large number of requests sent to micro@hawaii.edu as a result of the massive disruptions and relocations after the flood, DNS requested purchase of a web-based software system to improve on follow-up and consolidate troubleshooting information. The department was able to purchase WebHelpDesk (WHD) in January 2005 to expedite disaster-related support of staff and public IT equipment and services. The system went live for

Supplies/Repairs	\$4,843	--		\$19,060	--	
Software	\$11,452	\$1,049	all	\$11,440	\$27,206	all
Equipment/Datacomm	\$14,408	--	types	\$25,775	--	types
Micros/Printers	\$38,485	\$71,142	combined:	\$12,378	\$74,530	combined:
Scanners/BCRs						
Total	\$69,188**	\$72,191	\$5,247	\$68,653	\$101,736	\$21,817

	2000/01		1999/00	
Funds	General	Special	General	Special
Supplies/Software	\$13,465	\$34,446	\$24,080	\$18,385
Equip/Datacomm	\$18,147	\$27,852	\$14,976	\$68,746
Micros	Inc. above	\$253,602	Inc. above	\$255,727
Total	\$31,612	\$315,900	\$39,056	\$342,858

- + University Librarian Enrichment Fund (aka RTRF funds)
- * Other Special funds include: system-wide Ariel funding, EWC, SEED/DEI and WCC grants, UH Learning Communities, UH Foundation & Science/Technology grants
- ** Some funding for Equipment/Datacomm moved from maintenance category to purchase category

Library Web Server

Statistics

The Hamilton Library web server statistics combine data on use of the Hamilton Library main web pages as well as Hamilton's Digital Archive Collections (Hawaiian Language Newspaper Project, the Hawaii War Records Archive, and the Trust Territories of the Pacific Archives). The library server statistics for September through December 2004 were lost in the flood damage. The statistics for January through March 2005 are from the emergency temporary server and after the transition to the new "permanent" server there were configuration and power issues that damaged some of the logfiles. These reasons and the reconstruction of web pages (still ongoing) make reporting of any existing numerical statistics unreliable.

Projects and Highlights:

Data Communication/Network Support (Tom)

- **DISASTER RECOVERY** (equipment, data connection, cable reconfiguration, moves, replacements, power outages, UPS installs, insurance and FEMA paperwork, meetings, site visits, etc.)
- Replaced the Phase III 5505 fiber uplink with a 10/100baseT uplink module. Using this module eliminates the need for a media converter so reduces the by one, the number of points of failure.
- Did a site survey of the datajack locations; worked with ITS to establish GovDocs wireless (twice! Once in Hamilton in September and again in Sinclair in May).
- Setup videoconference equipment and provided support for several sessions in Yap room
- Consulted with Arnold Kameda, Tech Director for the medical school regarding NAT and accessing library electronic resources.
- Began discussion with ITS to move Sinclair datacomm equipment to separate room from ITS equipment
- Re-did router configurations for the Phase III and Sinclair routers for the transfer of the web, proxy, and Systems' ftp servers back to Hamilton.
- Modified config for Cisco 4700 to be the "outside" router to return to pre-flood configuration of outside_router--firewall--inside_router.
- Tested pager & signal repeater system inside Hamilton library - still too many dead spots to be useful unless lots of repeaters are used which makes system too expensive.
- Troubleshooting & ultimate resolution of problems with automatic anti-virus updating on the firewall
- Setup connectivity to the Linksys webcam installed at Hamilton front door
- Ongoing consulting with Innovative Technology Solutions and Gregg Geary regarding security cameras in Phase III (the cameras work but the multiplexor is fried). Planning for a Library-wide surveillance system linking new installs in Phases 1 and 2 and existing cameras in Phase 3.
- Installed gigabit interface modules for the 3550 and 3750 switches to provide gigabit backbone for connectivity to servers in Phase III
- Installed Cisco 2621XM router in Phase II and Cisco 4700 router in Phase III to provide a routed interface for the firewalls to enable auto update of the AV and IDS definitions. (pre-flood). Post flood - 2621XM lost in flood, replaced with Cisco 3725, Cisco 4700 moved to Sinclair to support temporary data center.'
- Implemented campus network access redundancy utilizing HSRP and campus network connections in Phase II and Phase III. (pre-flood). Post flood - Only single access to campus network available through Phase III; HSRP currently not applicable.
- Upgraded existing Cisco switches to current IOS for more reliable operations.
- Installed a media converter rack in the Computer Room to organize the current standalone media converters into a rack mounted unit with redundant power supply for added reliability.
- Assisted ITS in preparing the network infrastructure for the Hamilton CLIC Lab implementation.
- Replaced outdated Cisco 5505 with Cisco 3550 (for Phase III, Phase II 5505 lost in flood).

Microcomputer/Server Support (Wayne, Wing)

- **DISASTER RECOVERY** (equipment, printer connections & reconfiguration, moves out of and back into Hamilton, replacements, restoration of connections, power outages, UPS installs, insurance and FEMA paperwork, meetings, site visits, etc.)
- Installed Glyphgate (Hawaiian diacritics display) on web server
- Created database for Russian passport album digitization project
- Web Redesign group member
- Designed and implemented ILLiad voyager data retrieval, import and user login code. Ongoing support of ILLiad and OpenURL connectivity
- Electronic resource database and user interface ongoing support
- Experimented with Greenstone installation on E250 web server; not compatible with E250 Solaris OS
- Preliminary SMS server implementation for automatic patch installation - interrupted by flood
- Creation, update, review of endless FEMA inventory, purchase, lost report spreadsheets
- Ongoing restoration and recreation of server systems and services
- Install Goprint version 3 on 2 servers and all paystations
- Setup SUS server to handle WindowsXP automatic updates on all staff PCs
- Install and support python, zope, and plone on the inTRANet server

Web Support (Beth)

- **DISASTER RECOVERY** (pulling muddy PCs out of Ph2 basement, recreation & restoring of web directories, pages, forms, power outages, FEMA paperwork, meetings, site visits, etc.)
- Attended 2004 Tools for Life workshops on assistive technology, updated ADA information on web site
- Attended Association for Social Anthropology in Oceania Conference in Kauai, presented informal session
- Interim, part-time Head of Preservation during Lynn Davis sabbatical - interrupted by flood
- Web Redesign group; Treasures of the Library committee
- Created and compiled Web Use survey
- Planning WOW (World Organization of Webmasters) conference WOW Web Design and Project Management Conference to be held November 7-9, 2005 at UH Manoa

Department Head (Martha)

- **DISASTER RECOVERY** (equipment connections & reconfiguration planning, moves, replacements, restoration of services, power outages, UPS installs, insurance and FEMA paperwork, meetings, site visits, etc.)
- Served as member of Department Heads Group
- Served on the Access Services Librarian search/selection committee
- Served as technical support and consultant for potential and ongoing digitizing projects
- Participated in the ongoing support of the Electronic Resources gateway

Progress on 2003/2004 Goals:

Data Communication/Network Support

- Replace one of 2 "end of life" Cisco 5500 routers with two Cisco 3550 layer 3 switches - by December 2004
Done
- Replace fiber switch for wireless connection with a media converter rack that holds 12 to 18 media converters, then use a regular Cisco switch to uplink to the wireless switch - by December 2004
Done
- Continue replacement of 2924 and 2924C switches. Replace up to 17 of the 35 which will be at "end of life" in 2006 (approx cost = \$17K) - by June 2005

Microcomputer/Server Support

- Upgrade 34 staff PCs to WinXP - either via license purchase or CPU replacement - by December 2004
- Flood replacements = 78; plus new equipment for temporary preservation staff
- Upgrade at least 20 public PCs in BHSD 1st floor cluster to WinXP (upgrade CPUs in rm306, recycle to BHSD, upgrade OS) - by June 2005
- Room 306 became staff room, then Acquisitions; PCs went to BHSD to replace public equipment that was relocated to Sinclair after the flood to provide patrons with comparable computing access while Hamilton was closed; public PCs updated to Win2k
- Implement Unicode client update using SMS server - expected date January 2005
- Unicode version of Voyager was installed in mid-May 2005; the SMS server was destroyed in flood and was not back to full working capacity
- Improve and expand use of campus LDAP authentication by applying it to other web-based request forms as applicable
- 1. Web help desk AD integration through ldap connection. 2. Plone intranet/internet login with AD usernames through ldap
- Coordinate and resolve authentication and other electronic resource/proxy issues with new JABSOM library facility
- Ongoing
- Convert Catalogers Desktop product from LAN-based to web (depends on Library of Congress) - as soon as possible
- Catalogers Desktop PC-version was retired by LOC at the end of October 2004, when tech services was reconstituted after the flood, the web version took its place
- Consult with Kokua Office and upgrade or expand ADA equipment and software available in library - by June 2005
- Flood happened, no money, no upgrades or expansion were possible
- Upgrade public and classroom printers and up to 15 staff printers - by June 2005
- Flood happened, no money, no upgrades or expansion were possible
- Replace CD server hardware to increase response and reboot speed
- New equipment bought to replace flood destroyed CD server achieved this goal.

Web Support

- Establish and provide a low maintenance "library solution" for implementation of staff inTRANet - by December 2004
- *Flood happened*
- Continue transitioning of departmental pages from UHUNIX to Library web server. Relocate at least 2 departmental web sites by June 2005
- *Flood happened*
- With support from the Worldwide Organization of Webmasters, organize and offer a 2-day conference or workshop at the University - by May 2005
- *Flood happened, conference planned for November*
- Explore possibilities for implementing a "MyUH" type library web portal ("MyLibrary")
- *Flood happened*

Digitization

- Apply for a local or federal (by February 2005) grant funding for digitization or pilot development of one of the recommended collection:
- *Flood happened*
- Participate in implementation and use of the OCLC Digital Archive product - by June 2005
- *Flood happened, Library Admin denied request to purchase OCLC Digital Archive*
- Investigate and establish pilot "Dspace-like" system (perhaps with UH Faculty papers) by June 2005
- *Flood happened*

Goals for 2005/2006:

Network/Datacomm

- **DISASTER RECOVERY**
- Continue to maintain network security through TACACS authentication, configuration management, access lists, and IOS upgrades.
- Pursue separate telecom rooms for Sinclair network equipment.
- Continue to pursue direct connection between Hamilton and Sinclair.
- Continue to explore enhanced network services such as IP video, audio/video streaming, and media on demand.
- Continue with network equipment replacement plan.
- Continue to improve firewall efficiency through firewall policy additions/revisions, firmware/antivirus/intrusion detection upgrades.
- Install, configure and maintain PIX firewall for Sinclair.

Microcomputers/Printers/etc.

- **DISASTER RECOVERY**
- Integrate logins to eventually allow library staff to access all services with the same name/password
- Finish deployment of web server with coldfusion, plone, and apache for the intranet and internet
- Finish the interrupted deployment of the SMS server
- Create structure for individual file sharing; Investigate staff remote access of networked files
- Investigate options for mirror CD Server in Sinclair and/or remote connection to HL CD Server
- Upgrade public printers and up to 15 staff printers - by June 2006
- Install and support Self-Checkout kiosks in Hamilton and Sinclair
- Assist with installation of expanded web camera security system in Hamilton
- Migrate more CD resources to CD Server, support newly acquired Asia CD products

Web

- **DISASTER RECOVERY**
- Create a standardized approach to archiving websites
- Adapt Sinclair Library online shelving tutorial for Hamilton Library
- Acquire and apply increased CSS and XHTML skills
- Continue Web Usability testing for redesigned web site
- Assist in planning PNS/PRDLA conference - July-November 2005

Digitization

- Apply for a local or federal (by July 2006) grant funding for digitization or pilot development of one or more collections
- Participate in implementation and use of the OCLC Digital Archive product - by June 2006
- Investigate and establish pilot "Dspace-like" system (perhaps with UH Faculty papers) by June 2006
- Upgrade print/photographic digitization equipment - ASAP
- Acquire and implement pilot/experimental AV digitization equipment and software in Sinclair AVC