

Desktop Network Services

Annual Report 2005-2006

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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. In the past year, we have also added support of library security cameras and their PC-based recording systems to our responsibilities. 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 2005-2006:

- **Continued Recovery From Flood**

As was the case last year, and will continue almost surely to be the case until 2009, work related to recovering from the flood is ongoing, if now mostly behind the scenes. 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 buildings (and most recently an off-site branch of Gov Docs at the Dole Cannery) are just some of the factors that make disaster recovery a lengthy and ongoing and complex task.

Major Functions Performed by the Department (continued)

- Designed, migrated content to and launched new staff Intranet using the Plone CMS (Content Management System) software (<http://libstaff.manoa.hawaii.edu>)
- Designed, migrated and created content, and prepared for soft launch of new library main web site (<http://library.manoa.hawaii.edu>)
- Upgraded versions of PHP, MySQL and other essential database back-end applications
- Installed and activated library web site search system based on the "Google Mini Search Appliance" (<http://search.libweb.hawaii.edu>)
- Installed basic versions of DSpace and Greenstone digital library software systems (<http://128.171.57.25/gsd/cgi-bin/library> and <http://micro22.lib3.hawaii.edu:8080/dspace/>)
- Supported digitization initiatives and projects. (Configured and supervised creation of Save Our Surf, Steve Thomas Traditional Micronesian Navigation Collection and Signal Corps Photos with Streetprint Digital Library software <http://digicoll.manoa.hawaii.edu/>)

Personnel:

The department operated with a permanent staff of 4 positions and 1 temporary position; in addition, we had 2 FEMA-funded temporary employees hired in June 2005 to assist in flood disaster related recovery efforts.

- Martha Chantiny, Department Chair, Librarian IV
- Wayne Agunat, Microcomputer Support IT Specialist
- Tom Ishimitsu, Network Support IT Specialist
- Wing Leung, Server Support IT Specialist
- Beth Tillinghast, Web Support, Librarian III [temporary appointment through July 2007]
- Wilbur Wong, IT Specialist [temporary appointment through June 30, 2007]

- Sunny Pai, Intranet Development, Librarian III [temp appointment through December 2006]

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 were received primarily via the WebHelpDesk (WHD <http://128.171.57.14/micro>) with some 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 and Dole Cannery.

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 library-wide use in mid-February. This past fiscal year is the first full year of operation of the WHD. It has been extremely useful in keeping all information about specific requests easily accessible in one record. The WHD system combines all related communication about a request into one "ticket" and thus a count of total jobs is not the same statistic as in previous years. Having Wilbur on board to provide in-department in-person "just-in-time" support on a daily basis to Collection Services and Circulation has cut the number of requests that staff need to send via electronic means. While our workload has not lessened, the counting of tasks is not a good measure of service provided, so there will be no statistics supplied.

Major categories of services provided include:

- Configuring, updating and supporting Windows, Linux and Unix servers
- Troubleshooting problems (or apparent problems) with network, microcomputer equipment, software, security cameras and printers/printing
- Performing equipment disposal, inventory accounting for insurance and FEMA purposes, installations, configuration, and upgrades, moves and maintenance operations
- Monitoring network and server activity logs, anticipating and responding to warning signs; detecting, deterring and/or resolving errors
- Maintaining and expanding products available on the CD server and performing CD ROM product installs, upgrades and troubleshooting
- Upgrading Goprint software and maintaining operational client software on Goprint paystations
- Monitoring maintenance and bid contracts for datacomm, printing and microcomputer equipment
- Handling numerous short and long-term projects

The number of PCs supported by DNS increased slightly during FY 05-06. In spite of lost classroom and public space due to flood relocations, the total number of supported PCs is almost back to the pre-flood count. All of Technical Services and Gov Docs/Maps received new computers, barcode readers and printers last FY after the flood. Given the grim budget outlook those PCs may need to last for 5 years!

PCs by Department	7/04 [public PC]	7/05 [public PC]	7/06 [public PC]	Comments (relate to most recent year statistics)
Admin	16 + 3 Macs	14 + 3 Macs	14 + 1 Macs	Includes Development Office
Acquisitions	13	13	18	All new FLOOD replacements in 2005
Archives/Jefferson	12[1]	13[2]	10[2]	New department created
Asia	32 + 2 Macs	26 + 2 Macs[7]	31 + 2 Macs[12]	includes Goprint paystation
BHSD	94[77]	89[74]	92[76]	includes 2 Goprint paystations & 3 Ref desk PCs
Classrooms	53 (rm 113, A153, A156, 306)	38 (rm 113, 301, A153, A156)	36	Classroom 306 removed, includes Yap Conference room
Cat/CatSS	24	23	23	All new FLOOD replacements
DNS	18 + 2 Macs	15 + 2 Macs	14 + 2 Macs	includes PCs for testing, & server backups
Digitizing	5	5	5	
Computer Room '05-'06 Telecomm Rms	11 + 1 Macs	14 + 2 Macs	17 + 1 Macs	Servers: network printing, cataloging LAN, Goprint, Network monitoring, Calendar & MM, SQL, Sci/tech PRAISE, Ariel, Shuhai Wenyan

Fiscal/Mailroom	9	9	9	
Gov Docs/Maps	17[9]	10[1]	19[6]	All new FLOOD replacements in 2005, includes 2 Dole Cannery
HL Circ	25(12)	25	26	12 = counter or workroom, includes self-checkout station
ESP/ILL	7	7	7	Includes Ariel upgrade
Preservation	10	16	16	Includes flood funded laptops in 2005 for temp conservation staff
Sci/Tech	43 + 6 Macs	42 + 5 Macs [35]	48 + 5 Macs [36]	includes Goprint paystation, additional equipment mostly grant funded
Serials	25	24		All new FLOOD replacements in 2005
Sinclair	80 + 9 Macs	76 + 8 Macs [49]	88 + 9 Macs [41]	Public includes 2 Goprint paystations, 8 servers, 11 Circ counter
CLIC		[13]	None?	Permanent "loan" after flood
Special Coll	29[17] + 1 Macs	27[15] + 1 Macs	28 [15] + 1 Mac	includes Goprint paystation
Charlot	1 Mac	1 + 1 Mac [1]	1 + 1 Mac [1]	Does not include Jefferson after 6/03
Systems	12	11	14	Includes site FTP server, security camera server
TOTAL	560	535	550	

PCs by Department	6/01	7/02 [public PC]	6/03 [public PC]	Comments (relate to most recent year statistics)
Admin	5	8 + 4 Macs	12 + 3 Macs	Includes Development Office
Acquisitions	12	14	13	
Archives/Jefferson	2	3	4	New department created
Asia	27	30[11]	31 + 2 Macs[12]	includes Goprint paystation
BHSD	59	82[66]	93[76]	includes 2 Goprint paystations & 3 Ref desk PCs
Classrooms	13 (rm2, 401)	35 (rm 113, 156)	51 (rm 113, 156, 306)	includes Yap Conference room
Cat/CatSS	22	22	22	
DNS	10	14 + 2 Macs	15 + 2 Macs	includes PCs for testing, & server backups
Digitizing	4	4	4	
Computer Room '05-'06 Telecomm Rms	5	9	10	Servers: network printing, cataloging LAN, Goprint, Network monitoring, Calendar & MM, SQL, Sci/tech PRAISE, Ariel, Shuhai Wenyan
Fiscal/Mailroom	8	9	9	
Gov Docs/Maps	14[7]	18[10]	18[11]	
HL Circ	24	25 (12)	25 (12)	12 = counter or workroom
ESP/ILL	7	7	7	Includes Ariel upgrade
Preservation	9	9	10	
Sci/Tech	21	39 + 3 Macs [28]	42 + 4 Macs [34]	includes Goprint paystation, additional equipment mostly grant funded
Serials	21	23	23	
Sinclair	56 ²	76 [32]	76 + 9 Macs [48]	Public includes 2 Goprint paystations, 8 servers, 11 Circ counter
Special Coll	25	30 [14] + 1 Macs	30 [17] + 1 Macs	includes Goprint paystation
Charlot	5	5	6 + 1 Mac	
Systems	12	12	12	
TOTAL	362	479	557	

Expenditures

2005/06 Funds	General	Other/Special@
Supplies/Repairs Software	\$10,499.80	all types combined:
Equipment/Datacomm	\$36,681.85	
Micros/Servers/Printers Scanners/BCRs		
Total	\$47,181.65	\$53,992.10

@ includes various uh foundation discretionary funds, library supply fund, goprint revolving fund

Past Years Expenditures

2004/05			Other	2003/04	UL+	Yap	Other
Funds	General	DISASTER	Special*	General	Special	Special	Special*
Supplies/Repairs Software	\$7,750 \$9,712	\$30,790	all	\$7,157 \$7,263	-- \$15,056	all	all
Equipment/Datacomm	\$18,644		types	\$22,118	\$821	types	types
Micros/Servers/Printers	\$18,126	\$281,216	combined:	\$19,443	\$16,388	combined:	combined:
Total	\$54,472	\$312,006		\$55,981	\$32,265	\$19,300	\$37,715

2002/03	RTRF		Other	2001/02	LMS	Other
Funds	General	Special	Special*	General	Special	Special*
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

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.)
- Improved Hamilton network infrastructure by implementing gigabit backbone; upgraded 2924 switches to new model 3550s for higher network speed
- Improved Hamilton network security through combined use of router access list and firewall policies
- Provided wireless support for PNC/PRDLA conference
- Installed, configured and activated PIX firewall for Sinclair
- Served on committee to create and review contractors and architects bidding on building new server room
- Configured and installed video surveillance systems in Sinclair and Hamilton
- Coordinator and technical contact for installation of networking connection from off-site storage at Dole Cannery
- Assisted with acquisition and installation of Self-check system in Hamilton
- Managed network equipment maintenance contracts
- Coordinator and technical contact for installation of wireless capacity on Sinclair 2nd floor and in SL new classroom 201
- Improved access to network equipment in Sinclair basement
- Provided network connectivity to graduate carrels in Hamilton Phase II 2nd and 3rd floor

Microcomputer/Server Support (Wayne, Wing, Wilbur)

- **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.)
- Upgraded ILLiad ILL server software, reconfigured report writing functions
- Assisted with installation of expanded web camera security system in Hamilton
- Research and installation/support of security cameras (both wireless and closed circuit) in Hamilton and Sinclair libraries.
- Transport and setup desktop work stations as departments moved/reorganized their workspaces. (Acquisitions from Phase 3 to Phase 2)
- Setup of 3M SelfCheck System in HL for automated borrowing
- Migrated more CD resources to CD Server; consolidated various BHSD, Asia, SpecColl CD subscriptions onto the Datashare server. Allows for central administration
- Updated CDMenus for BHSD, Asia and SpecColl public PCs
- Configured SL with a Windows update server to improve consistency, timeliness of Windows updates
- Upgraded Deepfreeze on public PCs from v3 to v5.7 Enterprise; upgraded version provides application stability and remote administration
- Setup a backup server for SL and created a backup procedure for them
- Disposed some of the old/obsolete computer equipment by donating to A.C.E.S. (Aloha Computers for Education in Samoa). Disposed of old HP laser printers to Xerox
- Realized additional server utilization through virtual server technology in order to do more with less.
- Improved backup strategy with purchase of an LTO drive that increases backup capacity from 80GB to 280GB in order handle ever growing amounts of server and user data.

Web Support (Beth)

- **DISASTER RECOVERY** restored web directories, pages, forms, power outages, FEMA paperwork, meetings
- Researched possible software for Web Archiving Project
- Attended Progressive Web Development Workshop, Greenstone Workshop, as well as Legal Issues for the Web Workshop
- Provided instruction and support of Asian Interns for digitization projects
- Supervised LIS student intern
- Interim, part-time Head of Preservation during reinstatement of Lynn Davis' sabbatical, which had been interrupted by flood
- Chair of the Library Web Redesign group
- Participated in: Treasures of the Library Committee, Library Exhibit Committee, Staff Development Committee
- Created website for Treasures of the Library
- Designed and implemented user testing for current website
- Organized (World Organization of Webmasters) Web Design and Project Management Conference held November 7-9, 2005 at UH Manoa
- Assisted in initial organization of a Honolulu Chapter of WOW
- Tested and ready to implement a secure polling software system for the Library Senate.

- Professional contacts with State of Hawai'i Information Computer Systems Department, which is the State's Web Users Group, a significant portion being Plone users.

Intranet (Sunny)

Attended training for project management and web development skills for web recovery activities:

- "Web Application Development", World Organization of Webmasters and Honolulu Community College, Honolulu Community College, presented by Dr. Bebo White, June 26-27, 2006.
- "Building Digital Libraries with Greenstone", Outreach College, UH Manoa, presented by Dr Ian H. Witten, June 6-8, 2006
- "Introduction to Javascript for the Web", Outreach College, UH Manoa, presented by Chad Kassirer, March 31, 2006
- "Information Design: Interface Structure & Style", Outreach College, UH Manoa, presented by Leigh Duncan, November 4, 2005
- "Project Management: Process, Profiles, and Processes", Outreach College, UH Manoa, presented by Leigh Duncan, November 3, 2005
- "Progressive Web Design", Outreach College, UH Manoa, presented by Molly Holzschlag, August 6-7, 2005

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 REVIEW COMMITTEE FOR THE 2006 Institute of Museum and Library Services (IMLS) Library Services Grants for the Pacific Territories, Freely Associated States and Virgin Islands
- Technical support and consultant for potential and ongoing digitizing projects
- Participated in the ongoing support of the Electronic Resources gateway
- Participated in configuration and customizing of Google Mini "search appliance"
- Participated in creation/analysis of Hamilton library website, flood donation fund prioritization & student input budget surveys
- Implemented Google Analytics function (free web analysis service by Google)

Progress on 2005/2006 Goals:

Data Communication/Network Support

- **DISASTER RECOVERY**
 - Provided network connectivity support for new servers as they were brought online and housed temporarily in the Phase III telecom rooms.
- Continue to maintain network security through TACACS authentication, configuration management, access lists, and IOS upgrades.
 - Access control lists were periodically updated. IOS upgrades to switches done as recommended by Cisco Security Advisories. Login access to network equipment was maintained through TACACS authentication.
- Pursue separate telecom rooms for Sinclair network equipment.
 - The Library's network equipment in Sinclair basement was moved to a wall mounted secure rack separate from ITS equipment.
- Continue to pursue direct connection between Hamilton and Sinclair.
 - ITS's plans are to provide two points of access to the campus network. They feel that this will enable communication between Hamilton and Sinclair to continue in the event of a failure of one of the links.
- Continue to explore enhanced network services such as IP video, audio/video streaming, and media on demand.
 - Ongoing research and review of equipment requirements.
- Continue with network equipment replacement plan.
 - Purchased two Catalyst 2950C switches.
- Continue to improve firewall efficiency through firewall policy additions/revisions, firmware/antivirus/intrusion detection upgrades.
 - Ongoing. Periodically confirmed that antivirus and intrusion detection updates were occurring. Modified firewall policies as needed.
- Install, configure and maintain PIX firewall for Sinclair.
 - Completed. Cisco PIX 515E purchased, configured, installed in Sinclair.

Microcomputer/Server Support

- Integrate logins to eventually allow library staff to access all services with the same name/password
 - Library intranet implemented using existing library name service.
- Finish the interrupted deployment of the SMS server
 - Project priority given to library intranet and internet. Server has been recreated, but deployment will be deferred until next year.
- Create structure for individual file sharing; Investigate staff remote access of networked files
 - Library intranet creates a secure common space for staff to share files with any number of library groups or members easily through a web interface. Additional departmental shared space created as requested.
- Investigate and establish pilot "Dspace-like" system (perhaps with UH Faculty papers) by June 2006
 - Created pilot Dspace and greenstone servers
- Finish deployment of web server with coldfusion, Plone, and apache for the intranet and internet
 - Plone and apache integrated into one common IP address. Plone deployed for library intranet. Deferred for library website until next year pending review of performance in intranet. Coldfusion deployment delayed until next year to give priority to library website redesign.
- Upgrade public printers and up to 15 staff printers - by June 2006
 - No money
- Install and support Self-Checkout kiosks in Hamilton and Sinclair
 - Hamilton kiosk installed, funding for Sinclair kiosk not provided
- Assist with installation of expanded web camera security system in Hamilton
 - Completed

Web Support

- **DISASTER RECOVERY**
 - Worked on replacing our former staff-only website with Intranet, Developed and launched April 17. By June 2006 90% of the staff had logged in almost half had taken classes on how to use its tools.
- Create a standardized approach to archiving websites
 - Research continues, presentation made to ULC on Archive-It! software
- Continue Web Usability testing for redesigned public website.
 - Logo developed, content migration, researching and implementing technical standards (e.g., XHTML, CSS, W3C compliance, semantic markup), coding, and testing.
 - Possibly use Plone for a future version of the public website.

Digitization

- Apply for a local or federal (by July 2006) grant funding for digitization or pilot development of one or more collections
 - Preliminary research & matching fund pledges, meetings with State Survey, preliminary writing of grant text for NDNP
- Participate in implementation and use of the OCLC Digital Archive product - by June 2006
 - Batch upload function in place, database records created during June-August 2006
- Investigate and establish pilot "Dspace-like" system (perhaps with UH Faculty papers) by June 2006
 - Initial installation completed, draft MOU exchanged with Botany Dept. for Entomological Society journal
- Upgrade print/photographic digitization equipment - ASAP
 - AGAIN no funding
- Acquire and implement pilot/experimental AV digitization in Sinclair AVC
 - Equipment and software installed, preliminary selection of items for pilot project underway

Goals for 2006/2007:

Network/Datacomm

DISASTER RECOVERY

- Continue to improve network security.
- 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..

Microcomputers/Printers/etc.

DISASTER RECOVERY

- Continue maintenance of Hamilton and Sinclair library's networked printers
- Achieve a funded PC replacement schedule for HL and SL's PCs
- Upgrade ADA applications (JAWs and ZoomText) on PCs in the public area
- Setup SL with classrooms, similar to HL 113 and 256.
- Continue "environmental conscious" practice of recycling/disposing computer equipment
- If updated PCs available, upgrade public PCs with Win2K Pro to Win XP Pro.
- Complete deployment of Microsoft systems management server
- Create network drive space for backup of important staff documents.
- Purchase iSCSI based storage server to implement individual network drive space and support ongoing digitization efforts.
- Continue to increase server utilization through virtualization technologies.

Web

- Acquire and apply increased CSS and XHTML skills
- Explore implementing a "MyUH" type library web portal ("MyLibrary")
- Continue Web Usability testing for redesigned web site
- Further explore the use of Archive-It for web archiving
- Continue user testing on and enhancement of the new Library website
- Explore the use of D-Space for the university community

Digitization

- Digital Map System: 1) Initiate a digital map search/retrieval system for aerial photographs and satellite images; 2) develop and submit grant application for a project to digitize state survey maps
- National Digital Newspaper Project (NDNP) grant application with Hawaiian Collection
- Support greenstone projects in Sci/tech
- Continue development of Streetprint projects (preservefilm, social movements)