

Desktop Network Services

Annual Report 2001-2002

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Desktop Network Services serves the staff of the University of Hawai'i at Manoa Library by maintaining the Library's networks and all desktop computing and printing resources. It provides hardware, software, network, digitizing and training support, consultation and developmental research services and manages the Library's web server and web pages.

Major Functions Performed by the Department in 2001-2002:

- Planned and implemented replacement and upgrade of desktop computing, printing and networks in support of Endeavor Library Management System (LMS) and moves to and from Phase 3
- Planned and coordinated installation of 63 public PCs and BHSB and Access Services staff PCs in Phase 1
- Installed version 2000 post-release and 2001 upgrades of Endeavor Voyager client-side software
- Consulted with Library staff and Admin to determine computing hardware and software needs to expend LMS implementation funds
- Expanded and/or improved desktop computers, CD ROM systems, network printers and servers, debit printing systems
- Designed, expanded and managed UH Manoa Library data communications networks including implementing wireless access
- Revised UH Manoa Library web pages, continued creation and/or transfer of department pages to library server
- Provided orientation and instruction to UH Manoa Library staff in use of microcomputer hardware and software
- Supported digitization initiatives and projects.

Personnel:

The department operated with a permanent staff of 3 positions and 1 temporary position:

- Martha Chantiny, Department Chair, Librarian III
- Wayne Agunat, Microcomputer Support IT Specialist [This position was converted from Electronic Technician to IT Specialist, effective June 2001]
- Tom Ishimitsu, Network Support IT Specialist [This position was vacant until November 2001]

In addition, temporary positions have been filled as follows:

- Beth Tillinghast, Web Support, Librarian II [temporary appointment through July 31, 2003]

A third IT Specialist position was approved in March 2002, but not released for hiring on a casual basis until May 2002. The position was advertised as a permanent position on August 1, 2002 with a closing date of August 15. Interviews of applicants are underway (week of 8/26/02). The department also employs student assistants who perform microcomputer and network support tasks, ranging in number from 4 to a peak of 8 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 each to perform web and digitizing project support. During the spring semester, 2 students worked approximately 350 hours on a new digitizing project funded by a campus SEED grant. From June 6-August 15, Kevin Roddy continued the SEED grant project efforts during the last months of his sabbatical. (See Digital Projects below.)

EXPENDITURES: (note LMS Special fund not available after June 30, 2002)

2001/02	LMS		Other
Funds	General	Special	Special*
Supplies and Repairs	\$19,060	--	
Software	\$11,440	\$27,206	all
Equipment	\$25,775	--	types
Micro Computers	\$12,378	\$74,530	combined:
Total	\$68,653	\$101,736	\$21,817

	2000/01		1999/00	
Funds	Gen	Spec	Gen	Spec
Supplies and Software	\$13,465	\$34,446	\$24,080	\$18,385
Equipment	\$18,147	\$27,852	\$14,976	\$68,746
Micro Computers	Inc. above	\$253,602	Inc. above	\$255,727
Total	\$31,612	\$315,900	\$39,056	\$342,858

*Other Special funds include: Aquaculture & EIF grants, LIS Learning Communities & Agricultural Center Funds

Workload:

Requests for Desktop Network Services assistance are received primarily via electronic mail, and also by telephone and in person. DNS handled approximately 2400 email requests and reports in FY 2001-02 sent to the micro@hawaii.edu address. An average of 200 support-related emails were received per month, the highest monthly email total was just over 240 in the month of October, which is usually the month with the highest support requests. Department staff responded to requests for assistance in Hamilton and Sinclair Library as well as the Jefferson Annex. Requests for assistance were also handled via email to the libweb@hawaii.edu address. The number of support request emails sent to [micro@hawaii.edu]

declined from last year, in part due to the fact that most of the public, and a great deal of staff equipment was put in storage from mid-May to mid-August. Support requests for public computers were reduced by DNS installing additional security software on each workstation (Deepfreeze) and by the incremental replacement of the oldest workstations with newer (or new) equipment. In spite of the lower number of email requests handled, the DNS workload increased significantly in other ways.

During the spring and summer of 2001, extensive moves of staff and public microcomputer equipment took place. As of June 8, 2001 - DNS had moved at least 600 PC-related items (including monitors, CPUs, printers, BCRs, hubs, switchboxes, CD drives and jukeboxes, muxes) into Phase3 or storage. Most staff/public equipment was moved at least twice and in some cases three or four times. DNS had to load the equipment on booktrucks and then wait for temporary staff or storage room to become available, then move the trucks down to those areas and unload them. Sometimes equipment had to be off-loaded from the book trucks, temporarily stored while the trucks were used elsewhere, then reloaded on the trucks and moved to their installation locations. Starting in August 2001 and continuing through June 2002 - those items and newly received equipment were moved back to Phase 2, Phase 1 or different storage locations.

The de-installation, move, and re-installation of computers, printers and associated peripherals and data connections was an extremely complex endeavor requiring extensive pre-planning, supervision and follow-up. DNS had to accomplish the moves in time-compressed windows and in a way that incurred as little disruption to staff and public services as possible. Departments and equipment that were moved by DNS to Phase3 at the end of the spring semester 2002:

Acquisitions	11 PCs	4 BCRs	2 Printers	
Admin/personnel	5 PCs	6 Macs	8 Printers	
Archives	2 PCs	1 printer		
Asia(includes public & staff)	20 PCs	1 Mac	5 Printers	
BHSD(staff only)	14 PCs	3 printers	1 scanner	3 UPS
Cataloging/Catss	22 PCs	11 BCRs	4 printers	
Circulation/periodical room	24 PCs	15 BCRs	9 printers	1 UPS
DNS	6 PCs	1 printer		
DNS/digitizing to Rm. 17	8 PCs	2 printers	2 scanners	
Fiscal	6 PCs	2 printers		
Gov. docs/maps	7 PCs	3 BCRs	1 printer	
ILL/ESP	6 PCs	2 printers	2 scanners	
Mailroom	1 PC	1 printer		
Preservation	9 PCs	8 BCRs	1 printer	
Public PCs 1st floor (includes Ref Desk)	25 PCs	3 printers	3 CD drives	
Serials	22 PCs	9 BCRs	13 printers	
Spec Coll (includes public & staff)	15 Pcs, 1 Mac	2 BCRs	8 printers	1 scanner
Systems	1 PC			

* BCRs = barcode readers; PCs = monitor, CPU, keyboard, mouse, speakers, lock kit, zip drive, etc.

Printers = any kind dot matrix, laser; UPS = uninterruptible power supply (heavy battery!) The number of PCs supported by DNS increased 25% during FY 01-02. Large numbers of staff PCs were replaced with new units that are capable of running the 2001.3 version of Voyager software (expected June 2003) and Windows 2000. Replacement of one computer means at least 2 complete computer moves and reconfiguration - as the old one is "bumped down" to be either a student/

departmental or public workstation. In many cases a single replacement actually generated 3 or more moves and reconfigurations as older PCs were moved around in the wake of the new arrivals. Thanks to very good planning and follow-up on the installs, many potential configuration problems (network logins, printer connections, etc) were resolved by DNS staff and students before staff needed to send email requests to [micro].

PCs by Dept	6/01	7/02 (public PC)	'02-related Comments
Admin	5	8	2 Macs converted to PCs
Acquisitions	12	14	7 replaced, all PCs Pentium 6xx-1Ghz
Archives	2	3	1 more PC held in storage for Jan Zastrow
Asia	27	30 [11]	includes Goprint paystation, 1 add'l PC to be added for specialized CD ROMs
BHSD	59	82 [66]	includes 2 Goprint paystations
Classrooms (rm2, 401)	13	35	Room 1 had 14 Macs
Cat/Catss	22	22	5 replaced, all PCs Pentium 7xx-1Ghz
DNS	10	14	includes PCs for testing & backups
Digitizing	4	4	
Computer Room	5	9	Servers: network printing, cataloging LAN, Goprint, calendar schedule, SQL, etc.
Fiscal/Mailroom	8	9	
Gov Docs/Maps	15	18 [10]	
HL Circ	24	25	
ESP/ILL	7	7	
Preservation	9	9	
Sci/Tech	21	35 [28]	includes Goprint paystation
Serials	21	23	5 replaced, all PCs Pentium 7xx-1Ghz
Sinclair	56 (2)	76 [32]	includes 2 Goprint paystations, 6 servers: for printer sharing & backup
Special Coll	25	30 [14]	
Jefferson Annex	5	5	3 replaced, all PCs Pentium 7xx-1Ghz
Systems	12	12	7 replaced, 7 staff PCs = 256MB, Pentium 1 Ghz
		9	See notes (3)
TOTAL	362	479	

*(1) Includes Ref Desks but not Goprint paystations or Circulation workstations

(2) Includes 2 servers; Sinclair also has a Macintosh-based web server

(3) 5 additional "recycled" public PCs installed Sci/tech areas in Phase3 2nd, 3rd, 4th floors in August; 2 PCs currently held for Archives (Jan Zastrow, public Reading Room) , Asia public CD ROM = 1, Maps public/scanner = 1

Major categories of services provided include: troubleshooting problems (or apparent problems) with network, microcomputer and printer equipment and software; performing equipment and software installations, configuration, and upgrades, equipment moves and maintenance operations; performing CD ROM product installs, upgrades and troubleshooting; installing and supporting 8 Goprint paystations with 8 associated printers and 2 servers in Hamilton and

Sinclair, maintaining hardware and software inventories; monitoring maintenance and bid contracts for datacomm and microcomputer equipment and handling numerous short and long-term projects.

Support tasks and services often involve more than one type of problem, or a situation reported as related to one matter, turns out to be something entirely different; therefore categories of support services overlap. Based on a sample of more than 1500 email messages to the [micro] address, the highest numbers of requests were related to hardware troubleshooting. Categories analyzed include: troubleshooting-hardware, software, printing, PC replacements and equipment moves, purchase and install requests-hardware, software, web- and CD ROM-based, in-house and remote database access, inventory maintenance, classroom support, and network/datacomm related responsibilities. A significant, but untallied number of phone calls relating to remote access problems was also handled by DNS students and staff.

Troubleshooting of all types (hardware, software, printing, classroom-related) accounted for almost 43.5% of the work performed by DNS support staff and students; software-related services (including installation, configuration, purchase and troubleshooting) accounts for 28.5% of the requests. Hardware related support (troubleshooting, replacement, purchasing, moving, and network-related) constitutes over 40% of the requests; support for printing, including the Goprint systems account for 19% of the email reports. Library web page updates, request for installation, reconfiguration or updating of CD products, or reports of problems with access to shared electronic resources such as the Cataloging LAN, CD Server, NUS database or remote access to databases account for a little more than 8% of the email messages to [micro]

The highest numbers of requests by department come from, or are related to, BHSD. This is partly because the department has the largest number of public PCs and also because this year, the Integrated Reference Desk was counted as "BHSD" for requests/problems reported during the summer. Support requests from Asia account for the next highest percentage, followed by Sci/tech and Special Collections. These departments all have numerous specialized public workstation setups and Asia staff computers have unique configurations due to CJK language requirements. See the charts for more details about the support tasks performed by DNS:

* [Requests by Department](#)

* [Requests by Type](#)

Library Web Page Activities

A number of changes were made to two department web pages. A final revision was made to the Russian Collection pages and the Preservation department pages were finalized. In addition new Disaster Relief pages were created and linked to the Preservation site. Additional documents for the Hawaiian collection were also added. Considerable consultation, formatting and editing, and follow up were involved in the adding of library Collection Development Policy statements and online Web Calendar scheduling.

In December 2001, the Libweb Email address and "Contact the Library" link on Hamilton Library's homepage was changed to an Online Suggestion box, and the email was directed to a new address "libsugbx@hawaii.edu" monitored by the Public Services Division Head. The "libweb@hawaii.edu" address remained in the footer of main library web pages in a link "Mail the Webmaster: libweb@hawaii.edu". On an average the libweb email account received 80 messages a month through November 2001 and approximately 22 messages per month since the contact email changed to libsugbx.

The categories of email messages that were most prevalent included Circ/ESP/ILL (and Voyager-Circ related questions), reference and information requests and library web page suggestions/updates/corrections. The next most frequent messages concerned remote access (including database and electronic resource related questions), library usage, services or facilities and sales, marketing or just-plain-spam. See the [Work-Orders by Type chart](#) for additional details.

Web Server Statistics

Page hit counters have been in place on several of the library site's main pages since August 2001. The hit counts as of July 31, 2002 were as follows:

Main web page (<http://libweb.hawaii.edu/uhmlib/index.htm>) = 543,960

Databases & Indexes page (<http://libweb.hawaii.edu/uhmlib/databases/dbinfo.html>) = 127,060

Digital Archive Collections main page (<http://libweb.hawaii.edu/>) = 20,935

Staff Only main page (http://libweb.hawaii.edu/uhmlib/staffonly/library_staff_materials.html) = 2750

Main pages for the three digital collections developed or expanded with IMLS grant funding had hit counts as follows:

Hawaiian Language Newspapers (<http://libweb.hawaii.edu/hnp/newspapers.htm>) = 7450

Hawaii War Record Photographs (http://libweb.hawaii.edu/hwr/HWRD_html/HWRD_welcome.htm) = 5,665

Trust Territory of the Pacific Archives (<http://libweb.hawaii.edu/ttp/tpi.html>) = 8,400

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). A few interesting observations can be made from viewing the web server statistics for 2002:

- As with last year's trend, there is an increase in the average successful requests per day as each semester progresses, with the highest use recorded in April 2002.
- There was a 35% increase in the successful daily requests from last year, while the failed daily requests dropped by 17%. Some of this positive trend is almost certainly a result of the improved design of the main page and the continued refinement of the navigation links.
- The average data transferred has steadily increased over the year, with a monthly average of almost 9.5 gigabytes. The highest transfer rate, close to 13.5 gigabytes, was recorded in June. This could mean more users, or users downloading larger files (such as more images), or both.
- The highest-use day is Wednesday.
- Highest use time of day is in the early afternoon, although usage is fairly high from noon to 3:00pm.

Projects and Highlights:

Data Communication/Network Support

- Removed Gandalf equipment from computer room
- Worked with State procurement to coordinate switch delivery
- Installed and configured Hamilton Library Phase III data communications
- Updated maps of datacomm equipment and jacks and labels on equipment
- Researched and configured Phase III router to work with Phase II router
- Configured router against denial of service attacks
- Worked with UH Telecom to install fiber jumper connections in Phase II
- Calculated amount needed and ordered fiber jumpers and wire management for Phase I
- Installed wire management racks in Phase I and II
- Integrated Phase I and SLIS into Hamilton Library network
- Implemented wireless networking in the Sinclair (2/02), Jefferson Annex (4/02) and HL (Yap room,7/02)
- Completed OS and hard disk upgrade for Library web server
- Implemented new IP range for public PC data connections in Phase 1
- Consolidated Ph2 Ground Floor telecom room switches

Microcomputer Support

- Supported Tech Services server for shared use of Cataloging CDs, Voyager workfiles
- Continued upgrade of all WindowsNT servers to Windows2000
- Supported proxy server for "Express PCs" and remote access to electronic databases
- Acquired and installed 120 new desktop computers (including debit printing paystations)
- Increased number of PCs in 114 and 156 classrooms
- Redistributed older PCs to various staff and departments, including donations to public schools
- Set up PC and printer for use by visiting Russian scholar
- Installed or updated numerous software programs.
- Installed DeepFreeze security program on all HL public PCs (8/01) and appropriate SL public PCs (10/01)
- Implemented change in network login names (one login per PC) to improve tracking logins for license purposes.
- Assisted with purchases of equipment and software from special funds
- Followed up all year long with DAGs and Fiscal in attempt to receive equipment funded with Phase 3 money (as of August 2002 no equipment has materialized)
- Increased the number of public PCs available in the BHSD area
- Implemented GoPrint at Sinclair (required reconfiguring their printing network and installing a print server)
- Switched all Goprint paystations from old DANYL debit card readers to new readers during Spring break 2002.
- Implemented "CD Menu", a VB scripted application, on public PCs to replace the outdated "AutoMenu" program.
- Installed Voyager 2000.1.3 client software interim update (11/01) and Voyager 2001.1 (7/02) on all staff PCs
- Utilized "Sniffer" to monitor network traffic
- Assist Scitech department with purchase and setup of new PRAISE web server

Web Support

- Served on Integrated Reference Desk, summer 2001
- Migrated and edited Russian Collection pages
- Created Library and Information Science (LIS) 100 course, "Libraries, Scholarship and Technology web page
- Migrated GovDocs pages to library web server
- Worked on formatting and loading approximately 110 pages of Collection Development Statements to web
- Researched, configured, trained staff in use of web-based Calendar software
- Conducted two Calendar Orientation sessions for Hamilton/Sinclair staff
- Assisted Preservation department in loading/testing web pages
- Updated ILL PERL scripts
- Revised Remote Library Card Activation form and ILL form
- Migrated WebPac TaskForce pages from UHUNIX to library web server
- Created and revised Online Suggestion Box form
- Migrated and edited ESP pages
- Digital Photography for University Librarian Reception, Russian publication, Special Coll Re-roofing Web page
- Participated in Disaster Relief Team
- Formatted and added the Hawaiian Women's Bibliography to library web pages
- Researched software options for Hawaiian Web pages archiving project
- Designed, took photographs, uploaded Library Hall of Fame page
- Major update and revision of Information Literacy pages

Department Head

- Maintained Library's main web pages; coordinated maintenance, expansion of pages with Web Support Librarian
- Interviewed and hired Network Support IT Specialist
- Wrote request for, justification, description and advertisement for Server Admin Support IT Specialist position
- Participated in Hamilton Library Phase III-to-II/I and renovation move planning and implementation
- Served as member of Department Heads Group, on the Head of Access Services screening committee, Electronic Theses & Dissertation and RLG Cultural Materials committees
- Served as Principal Investigator for SEED-funded digitizing project (Anti-Annexation Documents).
- Served as technical support and consultant for potential and ongoing digitizing projects (Charlot Posada, Alu Like Hawaiian Newspaper, Steven Seifried, Director of Information Technology JAB Med School, Robert Sullivan, Univ. of Auckland Library, Jean Thoulag, Assistant Director, College of Micronesia-FSM model digitization project etc.)
- Supervised LIS 690 internship during Spring semester

Progress Towards 00/01 Goals:

Achieved Datacomm:

- *Continue to improve methods used to track network*
 - *Periodically backed up all switch and router configurations Consistently reviewed switch, router and server logs Consistently monitored network traffic and bandwidth
- *Improve network/public desktop security*
 - *Evaluated and tested anti-spyware desktop software (Pest Patrol). Purchased several copies for pilot roll-out Evaluated and tested several network monitoring software. Selection/purchase pending availability of funds. Implemented host based network time server to provide accurate time sync for desktop PCs.
- *Implement network monitoring (Ciscoworks software)*
 - *Not implemented - interface too unwieldy, slow response, some command line interface commands not supported.
- *Add a System Administrator IT Specialist position to the unit to manage Windows 2000 and Unix servers*
 - *Position approved April 2002, to be filled on permanent basis approximately September 2002

Microcomputer:

- *Improve process, procedures and communication related to planning of department moves*
Department PC computer moves from ph3 to ph1 and ph1 to ph3 were accomplished smoothly
- *Write a department specific strategic plan*
 - *Not accomplished, waiting for revision of Library-wide strategic plan
- *Update the Microcomputer Support Policy*
 - *First draft submitted to Library Admin 4/02, second draft submitted 7/02; waiting for approval from Library Admin; draft posted on DNS web pages
- *Describe and publish list of standard software supported by dept.*

*List is included in Draft Microcomputer Support policy

- *Provide a comprehensive and consistent staff orientation to software and OS configuration*

*Not possible to accomplish as yet due to lack of staff in DNS and multiplicity of software and operating systems still in use

- *Continue digital resources development; support existing digital resources and initiatives*

*Work continued on TTPI digital collection, SEED grant for Anti-Annexation Documents scanning, participation on Electronic Theses & Dissertations and RLG Cultural Material committees

Web Support:

- *Extend employment period of the temporary Web Support Librarian, seek conversion of position to permanent status*

*Temporary position extended through July 2003

- *Continue transitioning of departmental pages from UHUNIX to Library web server*

*Worked with Special Collections, Fong Papers, Collection Services Policy Statements, implemented online web-based scheduling calendar for library-wide and departmental use

- *Participate in development of web-based instructional materials*

*Assisted with purchase (and forthcoming implementation and support) of instruction statistics program (Surveyor) for use in Public Services division

- *Investigate and implement additional usage analysis tools*

*Not possible to accomplish as yet

- *Insure ADA level-one compliance for all public web pages*

*Continued to maintain text only versions of all main pages

Goals for 2002/2003:

Data Communication/Network Support

- Implement wireless network access in Hamilton Library
- Implement intrusion detection system
- Continue to monitor and improve network security
- Continue to maintain and improve network documentation
- Re-allocate IP numbers assigned to computers, servers, switches and routers to improve network efficiency and network traffic management
- Change desktop PCs to full duplex operation for more efficient network connectivity

Microcomputer Support

- Implement "Dual Processing servers" into existing network to consolidate the servers DNS maintains
- Improve and maintain public PC configurations
- Improve server administration

- Continue to monitor and improve server and desktop security
- Continue to maintain and improve microcomputer support documentation
- Maintain student assistant support staff

Web Support

- Seek conversion of Web Support Librarian position to permanent status
- Participate in development of web-based instructional materials
- Investigate and implement additional usage analysis tools
- Investigate and implement a web page archiving program for Special Collections
- Research use of XHTML for web page development