

UNIVERSITY OF SOUTH CAROLINA COMPUTER SERVICES 2001 ACCOMPLISHMENTS

During 2001, Computer Services made significant contributions to the University. These accomplishments directly supported the mission of the University and the strategic goals of Computer Services.

GOAL 1: SUPPORT THE INSTRUCTIONAL MISSION OF THE UNIVERSITY

- **CREATE AND MAINTAIN IT FACILITIES**
- **PROVIDE IT TOOLS**
- **ENHANCE IT INSTRUCTIONAL SERVICES**

Supported the 24x7 operations of the BlackBoard course management system. Managed servers, software and databases. Handled daily data downloads. Used translation scripts on the Blackboard servers to minimize configuration changes to the mainframe database programs. Corrected formatting problems when necessary.

BlackBoard usage by the students and faculty was substantial in 2001:

- 1.5 million hits per month
- More than 2800 active courses
- More than 950 active faculty
- More than 560 faculty using the new GradeBook feature
- More than 24,000 active students

Upgraded the University's web-based course management system, Blackboard, from version 4.0 to version 5.1. The upgrade added several new features, such as the ability to weight grades and to set availability of a course and the timed release of course content. It allowed the creation of learning units and allowed an instructor to set the initial page of a course. Publicized the upgrade to the new version of Blackboard, created new Blackboard documentation for faculty and student use, and handled related support.

Provided instructor-led IT training for the University community

- Taught a total of 1,691 participants (including 221 faculty members) and a total of 191 training classes
- Developed new classes and detailed handouts for FrontPage Fundamentals, FrontPage Advanced, Windows 2000, GoLive, Mac OS X, InDesign, iClass
- Relocated the Macintosh classroom to provide class participants with an environment more conducive to learning by allowing ample space at each workstation for instruction.
- Updated Office from 97 to 2000 (Windows) and from 98 to v. X. for Mac on all classroom and staff workstations
- Updated Access training to include web integration features of Office 2000.
- Redesigned HTML training to begin inclusion of Accessibility Component as outlined in 508 guidelines.
- Redesigned Visual Basic 6 training classes and handouts.
- Updated the classes to provide the University community with the most recent versions of software including Visual Basic 6, Introduction to Word, Advanced Word, Introduction to Excel, Advanced Excel, Introduction to PowerPoint, Advanced PowerPoint, Introduction to Access, Intermediate Access, Advanced Access.

Provided self-paced IT training for the University community

- Expanded online training offerings. Implemented two new online learning programs for technical staff including TCT Technical Training for network professionals and Interskill training for application development and operations.
- Maintained ElementK on-line learning program, including providing support for end-users and began the transfer of students from ElementK's LearnItOnline program to Elementk.com program.
- Maintained a video library containing more than 500 videos. Developed strategy for updating content for Video Training Library. Coordinated development of web-based Video Library Reservation System.

Provided information technology software support for the University community

- Supported approximately 50 software programs on both the Windows and Macintosh platforms.
- Supported several new Operating Systems including Windows 2000, Windows ME, Windows XP, Mac OS X, Mac OS X Server.
- Coordinated implementation of Mac authentication to Novell servers for Labs on campus (using DSLogin).
- Assisted users in creating advanced data management systems and applications using Microsoft Access and other applications.
- Helped to implement and support new version of Virex for Mac OS X (version 7) along with creation of new web pages.

GOAL 2: PROVIDE THE CORE SERVICES FOR THE UNIVERSITY IT INFRASTRUCTURE

- **SUPPORT THE CAMPUS NETWORK**
- **PROVIDE PRIMARY COMMUNICATIONS SYSTEMS**
- **SUPPORT CORE INFORMATION SERVICES**

Installed new core Router (6509) with higher backplane speeds to improve Internet throughput. Removed the existing 5509 that was at the core of the Ethernet Backbone. The 5509 was the connection point for Coker 5509, LeConte 5509, Coliseum 5509, and Bates 5509. Moved 129.252.47.1 to the 6509 and made it the Gateway of last resort (Gateway to the Internet).

Increased bandwidth to primary ISP (InfoAve) from 30mbs to 45mbs over ATM. Modified the PVC's that connect the 7204 ATM interface to the LS 1010 ATM interface and mapped through to SCNET's ATM interface.

Installed a new Cache engine to improve Internet performance. Enabled WCCP on the 6509 for the first time and installed the Cache engine. Redirected all HTTP traffic to the cache engine.

Increased bandwidth via second ISP (Sprint) for an additional 31mbs of bandwidth over a DS3. Implemented dual homing with load balancing between the two Internet providers for performance and redundancy. Upgraded the connection from the network to the Toplayer switch to GB.

Physically separated the students and staff in the residence halls onto different switches and different VLANs. Identified new fiber paths from every residence hall to the 5509 that connected the building to the backbone. Added 6 new networks and grouped 10 other IP networks into existing IP networks to connect the staff to the backbone. Worked with facilities to ensure connectivity to Johnson Controls (environment control). Changed all helper addresses on the residence halls to the Netreg address. Defined a separate logical student network in August to separate residential dorm traffic from administrative and research traffic. This allowed better protection from Denial of Service attacks and viruses/worms, packet shaping and load balancing to improve performance for mission-critical applications and also allowed for different firewall policies to maximize performance and security.

Improved video and voice over IP delivery over the University wide area network. Worked with Cisco engineers to complete documentation of the regional campus voice and video connectivity. Moved all voice cables coming from the phone systems in the regionals and in Computer Services from 66 blocks to factory cables. Fixed all mismatches in configurations on switches, video end- points and phone systems. Reconfigured all quality of service settings. Upgraded from H.320 to H.323 video. Changed to EIGRP routing protocol from RIP and configured SAPs for peak performance.

Completed overhaul of the entire network in Thomas Cooper Library and implemented a wireless network throughout the building. Installed new CAT5E cabling. Installed 100% switch connectivity in the building to allow all stations to run 100 MB full duplex. Installed a route switch module in TCL 5509 to create a unique broadcast domain. Installed wireless access points to offer wireless connectivity through the whole building.

Completed overhaul of the Moore School of Business with 1GB links to each closet. Implemented a new router for the business school to improve speed in printing and data transmission within the building and to reduce the amount of traffic on the backbone. MSB has 9 subnets and 800 nodes in the building. Installed all new CAT5E cabling to offer 100 MB full duplex to all stations. All eight floors on each side have telecommunication closets with GB Ethernet links to the computer room on the first floor of the building. Installed a Cisco 4006 with port channeling to allow trunking to occur through the entire building.

Completed overhaul of the College of Nursing with 1GB links to the closet. Installed 200 new CAT5E drops in the building. Created new telecommunication closets on every floor and installed floor serving switches on every floor with GB links to the lead switch, a 3508, on the first floor.

Completed overhaul of the Gambrell, Humanities Classroom and Humanities building with new 1GB links to each closet. Installed 650 new CAT5E drops in the three buildings. Installed the 5509 that was at the core of the Ethernet network prior to the 6509 being installed in Gambrell. Created new broadcast domains in Gambrell and uplinked all networks to that 5509 at one GB speeds.

Completed overhaul of Barnwell and Hamilton with 1GB links to the closet. Rewired all connections in the buildings to CAT5E and installed all new 3548 switches in the closets. Moved uplink from the old cat 5000 that was in Gambrell to the LeConte 5509 and uplinked it at one GB.

Completed overhaul of Sloan College with 1GB switches to the backbone. Upgraded all connections to CAT5E and installed new Cisco 3548s. Linked to the LeConte 5509 at one GB.

Installed first all wireless network. Connected students living in the Holiday Inn on Assembly Street to the University network using a wireless point-to-point bridge with yagi antennas on the roof of the Holiday Inn and the roof of Computer Services. Installed wireless access points on the 4th and 5th floors in the Holiday Inn.

Enhanced the University Datawarehouse. Migrated to a storage area network (SAN) environment for stability and performance. Upgraded to the latest version of the Cognos software for improved functionality. Added 28 new financial reports. Added human resources and payroll information and designed reports for departmental access. Wrote more than 55 new human resources and payroll reports. Added course information and designed more than ten reports to provide enrollment and grade spread information for the colleges and regional campuses. This provides access to colleges to view types of students enrolled in college courses (by school and major, by class) and compare enrollments from semester to semester. The grade spread information will give specific course or aggregate information on grades assigned for various time periods.

Worked with Payroll on the implementation of the Goldkey Time & Attendance system to eliminate the manual printing, distribution, collection and entry of timecard and turnaround documents for all USC campuses. The system allows the employee to enter time worked and/or leave taken and for electronic routing for supervisory approval. This system will eliminate duplicate data entry, data entry errors, and processing lag time. The system will also reduce costs associated with the printing and distribution of paper documents. The system is scheduled to move into a production environment with phased implementation in 2002.

Completed implementation of the JSI Millennium software package and databases for the Alumni Association, Development Office, Special Events, and the President's Office. Upgraded to the newest version of the software during the implementation. This system will improve access, improve accuracy of information and help the Alumni Association reach the membership goal of 30,000. The system will also improve fund raising capabilities for the Development Office.

Developed and implemented the Bicentennial History Database to support the University's Bicentennial Celebration. - "On this day in Carolina history ..." allowed users to search a database of dates and events and was part of the USC Bicentennial web site.

Implemented the DARS software package (Degree Audit Reporting System) to track student progress toward degree completion to benefit advisors and students. The DARS system provides an efficient way of posting transfer work and assigning work to a degree program. Transfer work can be automatically entered into the system through SPEEDE. The system allows students to evaluate the impact of changing degree programs. The system also allows a student to see how the courses that have already been taken will satisfy the requirement of the new degree.

Rewrote the University Housing Invoice system to automate manual processes, reduce human intervention, reduce data entry errors and increase productivity.

Upgraded the USC Lancaster Telephone Switch for a total replacement of service. This project included completion of contract issues, walkthroughs, planning and implementation with a team that consisted of USC Communications, USC RCCE, USC Lancaster, Avaya, Lancaster Telephone and BellSouth.

Submitted a request for bid for the replacement of the University's Enterprise Server. This project included a study to compare current cost and performance capabilities with newer

technology. Prepared project justification and bid submission. An upgrade is required to support newer applications such as Linux web pages and servers and the possible reduction of some hardware and software maintenance expense.

Provided network and telecommunications design, installation and management for new University building projects. Attended the design meetings to present and discuss communications standards requirements for construction phase. Provided cost estimates for parts and labor. This included the evaluation and specification of the entrance infrastructure to bring voice and data to the new building. During construction, reviewed project to ensure the installation was done in accordance with USC and ANSI/TIA/EIA industry standards. Periodically met with the general contractor and installers to ensure the installation met the standards. Computer Services provided design, installation or management for the following new construction or major renovation projects in 2001:

- 1600 Hampton Street
- 743 Green Street, Facilities Building Renovations
- Basketball Arena
- Bates "B" Wing Renovations
- Bates West Renovations
- Cable Replacement, BA MOD to Bldg. 35
- Carolina Mall
- Calcott Renovation
- Capstone Dorms, Floors 9 through 16 Renovations
- Coker 4th Floor Renovation
- Coliseum Coach's Office and Locker Room
- CSD 4th Floor
- CSD Token Ring Conversion
- CSD/Humanities Fiber Upgrade
- CSD Annex Renovations
- College Street, Telecommunications Entrance Room Upgrade
- Engineering Machine Shop
- Financial Aid Infrastructure Upgrade
- Greek Housing Village
- Grounds Building Infrastructure Upgrade
- Journalism Upgrade
- Lancaster – Medford Fiber
- Library Annex Infrastructure Upgrade
- Longstreet Theatre Annex Infrastructure Installation
- Main Voice Cable Repair, Patterson to South Towers
- Main Voice Cable and Pedestal Repair, Maxcy to Thornwell
- McBryde Buildings F & G Renovations
- National Advocacy Center Infrastructure Installation
- New River (Beaufort)
- Palmetto-Richland Medical Park
- Plaza, Basement Infrastructure Modifications
- Plaza, Board of Trustees Conference Room and Offices
- Plaza, Dick Riley's Offices
- PSC Infrastructure Installation
- Public Health, St. Julian Place

- Public Health, Stoneridge Offices
- Public Health Infrastructure Upgrade (Bldg 76)
- Public Health Hub to Switch Upgrade
- SCANA Building (Engineering)
- Sloan Renovations
- Sumwalt 2nd Floor renovations
- Swearingen, Computer Science Labs and Offices
- Swearingen, Offices Additional Services
- South Quad Dorms
- Thomas Cooper Library Upgrade
- Trio Program (Building 134) Computer Lab and Network Upgrade
- Wellness Fitness Center

Developed a systematic plan to document the communication infrastructure on campus as required under the ANSI/TIA/EIA standards. Started the first stage of documenting the fiber.

Reviewed the campus backbone to determine where additional cable was needed to support the growing communications infrastructure, to upgrade aging or damaged cables and to plan redundant pathways to improve the reliability of the backbone.

Completed justification, paperwork and contract for hardware and software upgrade for the G3R switch. Upgraded G3R software from version 5 to version 9.1 including hardware in preparation for planned G3R system upgrade. Completed plans and contractual requirements for upgrade of existing Avaya G3R telephone switch to replace unsupported G2.2 telephone switch. Completed upgrade of eight modules from September-December 2001. Remaining eight modules to be completed by May 2002.

Implemented new security infrastructure including two Nokia IP530 Checkpoint firewalls and two TopLayer 3500 Appswitches for load balancing and redundancy. These TopLayer switches provide the ability to shape Internet traffic to better manage the available bandwidth and ensure that adequate bandwidth exists for critical applications to support teaching and research. Implemented distributed intrusion detection system to allow proactive monitoring and quick resolution when malicious traffic is detected on the University network.

Implemented NetReg for network registration for residential students. This registered student computers on the University network and provided the ability to inform students of good network behavior and also provided the ability to very quickly locate network offenders on the residential network.

Implemented hardware and software tools to proactively monitor the University network and servers for performance and security.

- Enabled Cisco Netflow on the 7204 edge-router to monitor the types and amounts of traffic passing between the Internet and USC.
- Installed Flowscan to process the information sent from Netflow and create graphs that present the information from several different perspectives, including the top ten users. This enabled Computer Services to prove USC needed more Internet bandwidth, faster, better configured firewalls, and that many network outages were caused by denial of service attacks originating from within the USC network.
- Installed NMIS to monitor the routers and switches on campus.
- Expanded BiGBrother to monitor the firewalls and some of the routers.

- Installed MRTG on the Internet firewalls to monitor the state of the connection tables on each firewall.
- Procured and implemented a sniffer which provided the ability to monitor all switches for errors and utilization in real time. Allowed for switch trace routes to show the actual path and port any IP node takes in the network and allows quick location of the port an IP address is attached to. Sniffer provided mechanism to study and trend network traffic.
- Installed new hardware to monitor NetWare Servers, NT/2000 Servers, and LAN/WAN Routing Equipment. Installed a new NetWare 5.1 Server for ManageWise.
- Implemented Virus Protection for GroupWise, NetWare and NT/2000 Servers to scan for viruses on 27 NetWare Servers and 49 NT/2000 Servers. Installed two Windows 2000 servers and configured WebShield to scan all GroupWise Internet email messages including attachments. Installed two new Windows 2000 Servers and migrated WebShield for GroupWise. WebShield for GroupWise detected and cleaned approximately 1,000+ viruses per week.

GOAL 3: PROVIDE EXCELLENT CUSTOMER SERVICE

Realigned resources to consolidate help desk and end user support functions. Processed more than 14,000 tickets in 2001. Collapsed phone numbers, trouble reporting systems, billing systems, and processes to provide a single number for contacting Computer Services for technical assistance. Documented procedures for each area or system and combined them into a single set of procedures. Consolidated the trouble ticket billing system, managed the regional campus trouble reporting system, managed the TCL Level 5 Lab ring down phone for authentication issues, and the creation, escalation, and processing of all trouble tickets for Computer Services.

Updated calling card lists after review by USC departments to ensure the cards should remain active.

Added the monthly administrative long distance information to On-Demand to provide access to departments to review call detail, eliminate printing and eliminate distribution of paper copies to departments.

Added IMS manual charge invoices to On-Demand so that users could review detail by RQ number and/or department number to eliminate printing and distribution of paper copies to departments.

Consolidated Communications and pager billing into a single invoice for distribution via On-Demand. This process also eliminated the need to print and distribute paper copies of the invoices.

Developed and implemented the Official Transcript Request option to allow students to request an official transcript and make payment via credit card through the VIP web interface. This results in less data entry and paper forms for the Registrar's Office and faster, more convenient service for the students.

Implemented an Email notification system for the library (ECIRC). This system allowed the library to generate statements and overdue notices to distribute to patrons electronically via email.

Developed and implemented a system (Uchoose Roommate Finder) that students residing in University housing can utilize to search for suitable roommates, check hall availability and to see if someone wants to swap rooms.

Developed and implemented the Online Parking Decal Application to allow faculty and Staff to signup for Parking decals through the VIP web interface.

Implemented a Patron Empowerment system for the library to allow the patrons to inquire on their library account through the web. This system allows patrons to view information on items checked out and fees owed.

Upgraded the library circulation system (USCAN) with new circulation and patron empowerment features. Installed a new version of WEBPAC for web access to the online catalog.

Developed and implemented the Supervisor Update by Department option to allow departments to update the supervisor information on their employees through the VIP web interface.

Added the Registration Eligibility Check option to allow students to check their eligibility to register for classes through the VIP web interface.

Developed Tour Request system for the University Visitor Center. The system provides the ability to more efficiently manage the number of visits which exceed 15,000 per year. The system allows visitors to request tours, tailor the visit, and generate an itinerary. The system will allow the Visitor Center staff to handle tour requests, admission appointments, class visits, academic appointments, housing tours, and other appointments on campus.

Developed the Orientation Signup option to allow new students to register for orientation through the VIP web interface. The system allowed students to view all available dates for their prospective major, elect to bring parents and elect to stay in campus housing. Credit Card payments are accepted for orientation and housing fees. The system provided a method to track students through orientation and replaced manual processes which allowed better student services. The system is scheduled to move into a production environment in March 2002.

Developed the Faculty Grade Input option to give faculty the ability to enter final grades through the VIP web interface. The system allows incomplete and discrepancy forms to be completed. Students are able to see Incomplete Contracts which detail course completion requirements. The system is scheduled to move into a production environment in March 2002.

Provided support to approximately 6300 students for Move-in weekend for 28 residence halls and the Holiday Inn. Assisted students with network connection to backbone, hardware, software, virus support and general computing at USC. Provided documentation and FAQs for GEM, BlackBoard, Authentication and Virus protection. More than 4,200 residential students connected to the USC network by September and over 5,200 by December.

Participated in USC events for prospective students, parents and current students.

- Represented Computer Services at USC Showcase displaying a wireless network and advanced computer graphics capabilities.
- Successfully provided USC incoming students with necessary information on computing at USC and coordinated CS representation at Orientation.

- Participated in and coordinated CS representation at the following events: Scholar's Day, Fall Open House, Move-In Weekend, Summer Orientation, Welcome Week, Taking Care of Business.

Promoted the services available from Computer Services to faculty through individual visits with ten college deans. Attended faculty meetings in colleges to demonstrate tools available to assist faculty including BlackBoard, VIP and training/support services. Designed brochures to be used at the "On the Road" presentations detailing academic support services available.

Converted the monthly IT Bulletin to new website redesign.

Assisted the BEST program through the College of Library and Information Science with technology training for participants.

Coordinated University-wide conversion from Jetform to Adobe Acrobat for University forms and provided training and support.

Developed new web pages for on-campus students connecting to USC backbone with Macintosh systems.

Upgraded public computer lab in Computer Services lobby with newer hardware and software. Added MAC computers for better public access.

Created new web pages for several of the support areas of Computer Services as well as new pages for Student IT, Announce, Campus Computing Labs and the USC Marching Band. Redesigned the Announce web site to create an easier interface and provided for archiving of old announce files.

Installed or upgraded more than 1000 PCs for multiple University departments. Updated servers and ensured that desktops had current software installed. Installed and/or upgraded virus protection, software updates, and security patches.

Implemented two Accounting Software Systems for University Foundations (Sun Guard, Blackbaud). Installed hardware and software, configured network printers and installed application clients.

Assisted vendors in the installation of a new Windows 2000 Server for proxy access to web-based electronic databases for the Library. This proxy server allows USC faculty, staff, and students to access the electronic databases from off-campus.

Created, deployed and maintained more than 40 images for the Columbia campus Library Public Workstations for over 250 workstations in 7 campus libraries. Implemented context-less login for all faculty and staff in the image updates to allow a single user ID to authenticate to the University network and login to public workstations for printing and applications.

GOAL 4: DEVELOP THE HUMAN RESOURCES WITHIN OUR ORGANIZATION

Participated in professional conferences and seminars including Educause, SCIDTA, ACUTA, INAAU, AFCOM, NetWorld & Interop, Telecommunications Industry Association Broadband Solutions Forum, SOX, Novell Brainshare, BellSouth Major Client Association, SuperComm, International Alliance of Avaya Users, BICSI, ComNet, Cumrec, JSI Millennium Users, Networking, Usenix System Administration Conference, Network Security SANS Conference, MacWorld, Microsoft TechNet.

Attended technical training required to support University applications including Avaya Definity Basic Administration, Avaya Generic Expert Agent Selection, BICSI LAN Specialty Review Course, BICSI Telecommunications Distribution Design Course, Cisco Campus ATM Solutions Course, CheckPoint Firewall.

Attended professional development training on business processes and management skills including Staff Compensation, EPMS for Supervisors, Smart Meetings, Interview and Selection Skills, Certified Public Manager.

Obtained technical and professional certifications including Novell NetWare 5 CNA, Novell Netware CNE, GroupWise 5 CNA Certifications, A+ Core and A+ Service Technician Certifications, Macintosh Service Certification.

GOAL 5: SUPPORT THE OPERATIONS AND CONTINUAL IMPROVEMENT OF OUR INSTITUTION

Installed and configured the GroupWise Storage Area Network (SAN) environment running NetWare Cluster Services to provide automatic failover and recovery. Installed and configured new hardware and software. Moved six Post Offices into the GroupWise SAN that provide email services for over 3,200 mailboxes. Consolidated Post Offices that were previously running on outdated, over-utilized, and failing equipment. Migrated eight more departments to the SAN environment which is more reliable, scalable, and adaptable to the increased demands of users.

Upgraded the Groupwise email system to version 6.0 for all 25 servers in the USC GroupWise System. This included 22 Post Offices, 12 Domains, and 15 Gateways. Worked with the network administrators on testing and implementation with minimal downtime and no loss of data. GroupWise 6.0 provides improved administrative and monitoring tools, new redundancies for Web Access, new feature sets for PDA's, web clipping for wireless applications, and improved client features.

Installed new servers for Groupwise WebAccess and upgraded to GroupWise WebAccess version 6.0 to create a more redundant and reliable system, improve performance, and provide a higher quality of service.

Installed and configured Veritas DLT Backup System for GroupWise System Backups. The localized fiber channel improved throughput and speed of the backups/restores, reduced traffic on the backbone and improved response time on GroupWise restores.

Installed and configured the AISNT SAN environment to support JSI Millennium, DataWarehouse and Time & Attendance applications. Installed and configured new racks, 6

PowerEdge Servers, 2 PowerVault Disk Storage Units, UPS Units, redundant switches, and cabling for high speed access to a Storage Area Network (SAN) environment for the AISNT Database Systems.

Developed draft plan to upgrade infrastructure to provide 24/7 availability and full redundancy and allow new technology and future growth (i.e. 10GB backbone). Finished initial design specifications included a fully redundant 10-GB Ethernet network to replace the existing 1-GB Ethernet network. Included in the design is the remainder of the equipment needed to move all local area networks from shared 10baseT to switched 100baseT architecture. The design included increased backplane capacity to 256 GB per second speed and fully redundant MSFCs on all backbone devices as well as diverse fiber paths connecting the hardware to a single core device in the Computer Services Annex.

Removed Token Ring from most University locations. Rewired all of the jacks in the building to the Ethernet wiring scheme. Removed Token-Ring cards, installed Ethernet cards, configured the network drivers and card configurations for approximately 300 workstations.

Modified the Student Accounts system to allow for PLUS (Parent) loans to be received electronically and disbursed according to federal regulations.

Supported the University through participation in institutional surveys and projects such as SURA, Strategic Directions and Initiatives, Costs Project, Institutional Planning and Assessment Datawarehouse survey, Time Capsule, Below-the-line request, SACS, Accessibility Committee, Health and Safety Training and Legislative Updates.

Deployed the new version 4.5.1 of the McAfee virus protection software.

Coordinated completion of the State IT Plan and monitored University IT expenditures.

Lead the effort for all offices and campuses to retire the vendor-unsupported Voice Response System. Coordinated effort between departments and regional campuses, helped identify and implement alternatives and ensured communication. This included rebuilding telephone vectors to support special use in the Registrar's Office, Dial-A-Job and Askus. Disconnected all associated telephone lines and adjusted billing on all former VRS lines. Worked to ensure high availability of VIP by implementing albus.csd.sc.edu to provide a back-up/mirror for www.sc.edu, vip.sc.edu, and web.csd.sc.edu.

Supported 24x7 computer operations which included:

- Mainframe Scheduled uptime verses Actual uptime – 99.7 percent
- Tapes mounted – 296,150
- Batch Jobs Processed – 369,250 of which 165,050 were Production jobs
- Output Printed – Over 7.5 million pages
- Scanning processing – 1100+ graders, 150+ sets of teacher evaluations and over 250+ batches of other types of scanning. Totaling over 275,000 forms scanned.
- Data Entry Services – Weekly timecards (133,000+ per year), bi-monthly turnarounds (21,000+ per year), bi-monthly hand checks (300+ per year) and other applications.
- Maintained mainframe, Solaris and Unix machines supporting mission critical application such as DNS and LDAP.

Maintained GEM email system that contained more than 135,000 accounts for more than 16,000 people who receive incoming email. The GEM system handled approximately 20,000 pieces of email per day.

Enhanced NDS (Novell Directory Services) for LDAP authorization and authentication to core University applications such as BlackBoard and GEM for more than 120,000 user IDs for faculty, staff and students on all campuses. Identified and cleaned up over 3,200 duplicate user IDs and 3,000 user IDs that had to be deleted in the NDS Tree. Loaded over 17,000+ employee user IDs into the NDS Tree. Updated the password reset and password change features on VIP to interact with LDAP for a simpler authentication setup and provided documentation to the USC community.

Redesigned the Server Farm which houses mission critical applications, data, and services for the entire USC System. Installed switches and patch panels, reconfigured wiring, moved servers, and installed new UPS equipment to alleviate problems with faulty uplinks, switch configurations, and poor performance. Added 3 switches and 3 GB uplinks for a total of 5 to increase the available bandwidth of the server farm, which provided more reliability and redundancy within the data network. Removed all trunking to ease the management of the switch configurations and increase the flexibility of the port utilization.

Reduced printed output by providing online report viewing through OnDemand for more than 100 reports eliminating approximately 2.4 million pages of print. Retired the Xerox 4850 printer. Installed the newest version of OnDemand and rewrote the OnDemand Online report security system.

Performed and/or assisted with 41 server installations or upgrades to NetWare 5.x.

Supported the 24x7 operations for University databases and applications.

- Automated the mainframe Standards System into paperless environment.
- Installed new versions of IMS (Information Management System) to provide many new features to bring USC applications into web-enabled systems.
- Installed new versions of DB2 (Relational Database).
- Installed new versions of JobScan and Docutext software.
- Migrated the Datawarehouse to a new environment and installed a SAN (Storage Area Network) for Client/server applications.
- Installed a Fiber optic channel from client/server environments to Mainframe Harbor backup System to increase performance.
- Supported over 4000 programs containing over 7.5 million lines of code.
- Managed web services for the University web site and VIP. There were more than 485,000 hits to the USC home page per month. There were more than 110,000 logins to VIP and more than 1,898,000 page requests.
- Managed Groupwise mail with over 5000 users and 3.7 million messages per month.

Installed and configured Open File Manager on 49 NetWare and NT/2000 servers to ensure open files were backed up. This increased the quality of backups by providing the ability to restore files that were open at the time of backup.

Continued upgrade of the Enterprise Robotic Tape Library to convert all University mainframe data stored on tape magnetic media from 15 to 25 year old technology to current standards using existing IBM 3494 Robotic Tape Library. Upgraded to a virtual tape system to fully utilize the

30GB or 60GB capacity of each tape. By the end of 2001, most of the IBM 3494 devices had been installed. A conversion of all mainframe tape data to this device will be initiated in 2002.

Lead the effort to replace or eliminate SNA communication devices still in use at Computer Services and throughout the campuses. This project included a study to identify current SNA environment and alternative technologies. Actual replacement of SNA will be completed in 2002.

Realigned Intra-LATA telephone trunking with the state Office of Information Resources to allow USC to do direct Intra-LATA trunking. This will result in an estimated savings of approximately \$3000 per month.

Consolidated realignment of telephone trunking between BellSouth and USC Columbia. Coordinated consolidation of existing USC trunks to take advantage of new State contract pricing by moving USC trunks to Primary Rate Interface (PRI). This will provide incoming caller ID to all digital telephones. This project will be completed in 2002 resulting in estimated savings of approximately \$90,000 per year.

Supported the 24x7 operations for the University network including File Servers, Desktops, and Backup systems.

- Supported more than 16,000 network connections
- Supported more than 600 switches
- Supported more than 40,000 users
- Completed more than 6500 network hardware and software support tickets
- Supported more than 60 NetWare file servers.
- Supported more than 30 NT file servers.
- Supported more than 100 servers on the Harbor and Veritas Backup systems.
- Supported more than 1,700 users under the Service Level Agreement.
- Supported more than 5,200 GroupWise mailbox accounts, which process more than 1 million messages per month.
- Supported more than 120,000 userids in the NDS Tree for faculty, staff and student authentication.
- Supported more than 80 network administrators on server, desktop, and GroupWise issues.

Implemented Voice over IP in several locations including Spartanburg to Columbia and Baruch.

Reconfigured the dial plan to point to Loopback addresses to improve management capabilities.

Installed a 3640 router in Hilton Head to allow convergence of voice, video and data.

Coordinated discussions to discuss Pinpoint 911 which resulted in a \$26,000 donation of equipment from Richland County and completion of a contract with BellSouth to have the USC Police Department as a fully functional Public Safety Answer Point (PSAP) by year end 2002.

Coordinated with USC Police Department, BellSouth, OIR and Richland County for Pinpoint 911 service.

Implemented monthly telephone billing to academic and administrative department to provide funds to replace capital equipment. This project included planning meetings with the USC

Budget Office to determine required allocation to the departments, a complete review of the existing telephone records and communication with departments about new procedures.

Improved internal business procedures

- Developed year-end close-out procedures for the Computer Services Business Office.
- Established internal procedures to ensure account number changes and telephone numbers are entered into the Coman system in order to recover billing in a timely manner and to reduce account number rejects.
- Investigated collection requirements for calls made from student residence halls that should not be allowed to make direct dial calls without a student authorization code or third party calling card. Consulted with USC-Internal Audit. Established an internal procedure to ensure that long distance access without an authorization code or third party calling card is blocked.
- Restructured and consolidated Computer Services accounts to make it easier to manage service costs and recovery. Reviewed expense, revenue and contra-expense transactions to make the necessary transfers. Worked with the Budget Office, Controller's Office and Accounts Receivable to realign budgets, deactivate accounts and transfer funds.
- Completed negotiations with BellSouth to resolve billing authorization and other issues. Developed billing authorization letter to prevent long distance vendor "cramming" on USC telephone service. Established monthly meetings between CS business office, Communications and BellSouth to resolve billing issues and increase coordination.
- Worked with Bellsouth and the Communications group to establish regional accounts for like services and to consolidate similar services under a master account. Placed all like services such as trunking and megalink service under one account. Placed other services (such as special circuits that are passed on to the customer) under a separate account.
- Evaluated and procured the BellSouth Bill Management system to allow evaluation of rates and services. This system will export data for billing purposes into existing billing systems and will eliminate repetitive data entry.
- Provided commitment cancellation and reduction letters to USC Purchasing and the Controller's Office to eliminate outstanding commitments and to help align the actual year-end budget projections.
- Gained electronic access to the USC electronic Journal Entry system to upload expenses and fund transfers. This eliminated redundant data entry and extended the monthly deadline for journal entry submissions.
- Created a new travel request form and wrote new travel request guidelines to ensure that all travel and travel reimbursements are done according to University policy.

Provided information to USC Accounts Receivable to place or remove holds on student accounts that were more than thirty days past due on long distance and voice services in order to collect outstanding balances.

Supported the 24x7 operations for the University telecommunications systems.

- Completed more than 4500 Phone and Voice Mail work orders.
- Installed and maintained more than 800 new student voicemail boxes. Completed all documentation, management and billing for all students that signed up for voicemail on campus.
- Supported more than 16,000 telephone lines for faculty, staff and students.

Worked with MCI and Telecom to eliminate outstanding long distance and cellular long distance services that were switched to the state long distance contract vendor.

Provided short notice telephone service to the NCAA Track and Field Championships in support of USC Athletics. Coordinated with BellSouth on an emergency order to provide twelve additional circuits via BellSouth feeder cable to allow event to go smoothly.

Worked with the South Carolina State Budget and Control Board contract representatives to resolve contract issues such as Rate discrepancies on pager invoices. Sought a rate amendment to the current state contract for Internet bandwidth with one of the existing contract vendors.

Worked with the state contract cellular representative and University Purchasing to ensure procurement and contractual requirements were identified in order to evaluate possible electronic tools to improve management of cellular transactions.

Modified the Payroll System to include new Dental Plus and Partners Health Insurance deductions. Made major enhancements to reflect the new rules and rates for Optional Life Insurance.

Created files of degree recipients for Clearinghouse to verify degrees for employers and companies doing background checks.

Converted CEEB codes to OPEID codes. The OPEID code is a standard to identify institutions for transfer students.

Enhanced the student/course eligibility routine and the Master Schedule of courses to check a student's major, second major, minor, area of concentration for inclusions and exclusions.

GOAL 6: ENCOURAGE THE EFFICIENT USE OF COMPUTING AND NETWORKING AMONG DEPARTMENTS

Assisted Regional Campuses Dean and Director of IT with telecommunications issues. Conducted site surveys of Allendale, Walterboro and Beaufort for telecommunications and data upgrades. Assisted USC Beaufort in planning new campus infrastructure with Hargray Telephone Co. for the New River expansion campus.

Formed a Security Taskforce as a subcommittee of the Network Manager's group to improve security at USC. The Security Taskforce developed a Network Acceptable Use Agreement for residential students and researched various solutions for network registration and recommended NetReg for implementation.

Updated Service Level Agreement for Network and Desktop Support Plan including support options for Desktop and Server Support, Server Only Support, and Backup Services Only. Revised the rates for services to better reflect the cost of providing the services.

Developed a security web site as a clearinghouse for security information at USC.

Contracted with an outside vendor to conduct a review of the University Wide Area Network. Provided assistance to Matrix engineers to reconcile communications documentation and trunking provisions to regional campuses.

Provided network tools to departmental network managers to assist in monitoring of performance and security.

Refined the method of communicating with USC community members accused of copyright infringement.

Redesigned the Computer Services web site for quicker download times, uniformity, and ease of navigation.

Participated in a variety of university committees including SACS committees, Strategic Planning, Blackboard, Distributed Learning, Teaching and Learning Center, GroupWise Managers, Consolidated Call Center, Website Accessibility, Mac Managers, Network Managers, Family Fund, Registrar Council, USC Admissions Officers, MAC Users Group, Security Task Force and Move-In Weekend.

Negotiated a new contract including a substantial discount with McAfee for a University-wide virus-protection software license. The contract covers PC and Mac desktop protection, UNIX protection, server and mail gateway protection and Exchange server protection. The most critical feature of the negotiation was the addition of home use privileges.

Negotiated and purchased a Microsoft Campus Agreement for the use of the most popular Microsoft Software products. The agreement covers all University owned or leased PC's, including all lab machines, for Faculty and Staff.

Participated in the design of a new web page for University Publications. The format of that page will be used as a new web design for all University of South Carolina web pages.

For the executive members of the SACS Team, installed and configured 20 laptops with docking stations, 15 additional laptops, 10 network printers, and network user IDs and email accounts. Implemented wireless connectivity at the Whitney Hotel and at Capstone Conference Center. Provided extended hours support and assistance for immediate response during the visit.