UNIVERSITY OF SOUTH CAROLINA
COMPUTER SERVICES
2003 Accomplishments

During 2003, Computer Services made significant contributions to the University to directly support 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. Supported faculty and students. Worked with BlackBoard to create a new method to retrieve usage statistics. BlackBoard use by faculty and students was substantial:

- 172,739 Average Page Views Per Day
- 414,190 Page Views on Most Active Day
- 992 active courses in Spring 2003
- 556 active instructors in Spring 2003
- 16,638 active students in Spring 2003

Installed and implemented BlackBoard version 6 over the winter holiday and prepared the system for the spring semester. Dealt with major issues and several bugs in the new software. Worked closely with BlackBoard to resolve problems, fix bugs and help faculty with temporary work-arounds.

Promoted increased use of BlackBoard features to students and faculty. Helped faculty use course cartridges provided by book publishers. Created and populated several organizations on BlackBoard. Planned usage of BlackBoard portal system. Taught classes to organizations on the use of BlackBoard organization feature.

Presented a workshop on instructional technology at USC for over 400 incoming graduate teaching assistants and new graduate faculty.

Planned and implemented the 2003 BlackBoard Institute where Computer Services, DEIS, the College of Liberal Arts, Mass Communications and Information Studies and the College of Education collaborated to teach beginning, advanced and feature-focused BlackBoard workshops to interested USC faculty and teaching assistants.

Worked with Dell to secure the donation of several Personal Digital Assistants (Dell Axim PDAs) for a project that studies the use of PDAs in a Journalism class. Worked with the faculty member to install software and to make sure PDAs were ready to use. Installed software to run an external keyboard, a wireless card and a camera attachment.

Created new teacher evaluation/exam grader procedures and documentation.

Activated ICPSR Direct Access for USC researchers in February to allow anyone in the USC domain to download ICPSR studies. There have been a total of 1037 ICPSR files downloaded using the Direct Access from February thru December.

Provided instructor-led IT training for the University community.

- Taught a total of 255 participants and 34 training classes
- Redesigned and taught the Visual Basic classes: Introduction to Visual Basic, Intermediate Visual Basic, and Database Management with Visual Basic.
- Redesigned and taught HTML Basics, Advanced Adobe Photoshop, and Web Presence.
- Updated the Introduction to Access, Intermediate Access, and Advanced Access handouts and taught classes.

- Provided special classes in BlackBoard for several faculty members at USC Spartanburg and USC Salkehatchie.
- Maintained and updated Mac OS X Training Lab.
- Maintained and updated both Windows XP Labs.

Provided self-paced IT training for the University community.

- Managed the ElementK online training program. Provided information, managed registrations and maintained vendor contract.
- Maintained the video training library which contains more than 500 videos and CDs.

Provided information technology software support for the University community.

- Supported approximately 50 software programs on both the Window and Macintosh platforms. Provided software support (SAS, SPSS, Access, Excel, Word, GroupWise, PowerPoint) to end-users via the ticket system, phone calls and emails.
- Provided support to students, faculty and staff on BlackBoard, email applications, authentication and system access, VIP, LISTSERV, communication tools, Internet tools, ICPSR and research/data analysis support. Provided consulting for general IT issues.
- Wrote new or updated documentation for BlackBoard, Gamecock e-mail, Listserv and GroupWise.
- Wrote detailed BlackBoard Chat documentation for distance students.

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

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

Activated E911 service for the USC campus. This allowed any campus telephone to dial 911 to access emergency services.

Upgraded telephone switch software from Multi-Vantage version 1.1 to 1.3. Updated firmware to version nineteen for the G3R telephone switch.

Configured IP Trunks for regional campuses to provide IP connectivity over the Internet at a lower cost than traditional telecommunications trunks.

Engaged Avaya to conduct a security audit of the G3R telephone switch. This included an examination of the features and restrictions of the telephone switch and a review of potential unauthorized use by individuals outside the University.

Upgraded the voice mail system from release 1.1 to 3.11 to enable the use of the Enhanced Voice Mail feature which will be deployed in the first quarter of 2004.

Activated new features of the G3R telephone switch. Established the USC Meet-me-Conference Bridge with the capacity to conference six callers with an assigned PIN.

Installed telephone service to support the Department of Justice's move of the Help Desk/Call Center from Washington, DC.

Deployed Avaya IP Telephony at the School of Public Health, Speech and Hearing Center located at St. Julian Place. The deployment consisted of 25 IP phones and provided full access to the University's telephone switch and voice mail system with all the available features and capabilities. Speech and Hearing was the first department on campus to utilize IP telephony.

Designed, programmed and implemented a call center for the Colonial Center Ticket Office to provide callers with information about events at the Colonial Center and to give the option to speak to a live person if necessary.

Expanded the University wireless network to include the Strom Thurmond Wellness Center, Bates Common Areas, President's House and Computer Services. Improved bandwidth and response time within Thomas Cooper Library by separating the wireless and wired VLANs.

Assisted Regional Campus Deans and Director of IT with planning and design to support voice, video and data requirements of The Palmetto College. Traveled to Cisco Research Triangle Park to design and test Cisco Quality of Service on video and data across the wide area network. Designed the placement of the local area network equipment (access switches and routers) and configurations.

Initiated a project to deploy a campus-wide wireless network for the Columbia Campus. Completed site surveys for two thirds of the southern area of the campus. Installed a solution engine which provides the ability to manage an enterprise network and allows for rogue access point detection, topology mapping, signature wireless attack detection and organization of wireless devices into manageable groups. The solution engine also gives the ability to schedule mass configuration changes, firmware upgrades, error statistics and trend data to allow proactive monitoring of the wireless network. The goal for 2004 is to have active service in Area 1 (south end of campus from Blossom Street to include Williams-Brice Stadium) and Area 2 (central campus to include areas surrounding horseshoe and south to Russell House and the “Honeycomb” residence halls).

Upgraded 140 Cisco 2916 network switches across the campus**.** Switches were replaced in the following buildings: 1714 College, 1728 College, 819 Barnwell, Bates West, Benson School, Byrnes, Cliff Apartments, Coker, Columbia Hall, Computer Services, DeSaussure, Douglas, Earth Water Science, Energy East, Faculty House, Flinn, Koger, LaBorde, Le Conte, McBryde, McKissick, Moore, Motor Pool, National Advocacy Center, Pendleton Garage, Pharmacy, PSC, Russell House, SC Library, Snowden, Spigner House, Williams Brice Stadium, Sumwalt, Thomas Cooper Library and Thornwell Annex

Upgraded approximately 150 Cisco 2924 network switches in the residence hall network. Replaced virtually all fiber-copper media converters in the residence networks with 1000 Mb/second integrated uplinks to improve reliability and increase bandwidth capacity of the student backbone. Configured all switches in the student network for out-of-band management to allow filtering to limit the spread of denial of service attacks such as Blaster and Nachi. Began the process of reducing the size of the LANs in the residence halls to limit the vulnerability within the local student networks to the spread of viruses and worms and to improve the overall service by reducing the amount of broadcast traffic. Switches were replaced in the following buildings: Maxcy, Preston, Capstone, Columbia Hall, Woodrow, Rutledge, McBryde and Patterson.

Replaced a Cisco Catalyst 4006 with a Cisco Catalyst 6513 to increase throughput for the Student network and allow for greater security. This hardware is less susceptible to malicious behavior such as viruses and Internet attacks.

Installed network switches and created trunks on all finished floors at 1600 Hampton Street. Provided telephone and voice mail services. Supported the movement of several departments including Payroll, National Advocacy Center, Printing, Human Resources, Benefits, Sodexho, Children’s Law, Professional Development, Post Office, Equal Opportunity Programs, Foundation, Continuing Education and University 101. Reconfigured workstations, verified virus protection and loaded security patches.

Installed network switches, created trunks and provided phone service to support the Greek Village which included the following Greek Houses: Delta Delta Delta, Kappa Delta, Alpha Chi Omega, Chi Omega, Sigma Nu, Delta Zeta, Kappa Kappa Gamma, Alpha Delta Phi, Kappa Sigma

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Replaced a directly-connected Internet Service Provider (Sprint) with a connection to the Internet through the State CIO (also with Sprint). This connection serves as a 20Mb backup to USC'S primary ISP. Current benefits of the CIO connection are stronger backup and reduced cost.

Replaced 1.5Mb T-1 circuits at USC-Union, Richland Medical Park II and USC School of Medicine with 3Mb IMA circuits. This supplies twice the bandwidth and allows for two 1.5Mb T-1 connections at the remote end of the circuit. In case of the failure of one of the T-1 connections, the circuit can stay functional on the other connection, allowing the remote site to remain connected until repairs are made.

Worked with the USC School of Medicine to provide a dedicated ATM T1 for the I-26 Video Corridor which is used to provide video conferencing between the Greenville Medical Hospital System, and the USC School of Medicine and the Medical University of South Carolina.

Upgraded from an OC3 connection to an OC12 connection to increase available bandwidth to both the commodity Internet and Internet 2. This connection provides a high degree of scalability to meet future growth in Public Internet and Internet 2 traffic. The OC12 also provides the basis for expansion of the wide area services such as expanding Palmetto College links from T-1's to DS-3's.

Established a separate Press Network to support special events, such as concerts and political visits, from the Colonial Center and Williams-Brice Stadium. This network allows non-USC users to use the campus infrastructure to reach the Internet without violating USC security policies.

Completed the project to replace all hubs with switches. This conversion to a switched environment from a shared environment increased performance dramatically and allowed for better management and support.

Provided network and telecommunications design and estimates for existing buildings and new construction. Reviewed requests from customers/project managers when a building (or part of a building) was renovated or when departments or colleges wanted to increase or upgrade their communications infrastructure. Made recommendations relative to the standards requirements, estimated the cost for parts and labor, and provided an estimate of the job. For new construction, attended building design meetings to present and discuss the communications standards requirements that apply during the construction phase. This includes the evaluation and specification of the entrance infrastructure needed to bring voice and data to the new building. During construction, reviewed the project to ensure the installation is done in accordance with USC and ANSI/TIA/EIA industry standards. Met periodically with the general contractor and installers to insure the installation meets the standards. Some projects are approved and become installation projects; others go through a number of revisions as the customer re-evaluates their needs and their budget. Some of these estimates are placed on indefinite hold.
Design and estimate projects for 2003 included:

- 1600 South Hampton - Building Infrastructure
- 743 Green Street, New Offices
- Bates "C" Wing Renovations
- Coliseum, Journalism Computer Labs and Offices
- Columbia Hall Renovation Phase l
- Gateway Child Care Center
- Greek Housing II
- New River Campus, Hargray Building
- President's House
- PSC 6th & 7th Floor Remodeling
- New River (Campus Backbone)
- Russell House, Barnes & Noble
- Russell House, Carolina Card
- Russell House, Copy Center
- Russell House, Gamecock Court

- Russell House, Grand Market Place
- Russell House, Student Government
- School of Medicine Colonial Drive
- School of Public Health New Building
- Sumwalt, Myrick Labs
- West Quad Dorms

Installation projects for 2003 included:

- 1600 Hampton Moves
- 1600 South Hampton - Building Backbone
- 1600 South Hampton - Building Infrastructure
- 1600 South Hampton to Humanities Conduit
- 743 Green Street, New Offices
- Bates "C" Wing Renovations
- Building 35 Move (Old Credit Union)
- Byrnes - 5th Floor Phase ll
- Capstone 1st Floor Conduit & Cable
- Caroliniana Library, Entrance Cable
- Columbia Hall Renovation Phase l
- Gateway Child Care Center
- Greek Housing II
- Inn at USC, Conduit/Cable Re-route
- McKissick, Welcome Center
- Middleburg Annex T1
- New River Hargray Building
- New River Campus Backbone Design
- President's house Renovations
- PSC 6th & 7th Floor Remodeling
- PSC Water Damage
- Russell House IT Move
- Russell House Salon Move
- Russell House, Barnes & Noble
- Russell House, Carolina Card
- Russell House, Copy Center
- Plaza, Basement Infrastructure Modifications
- Plaza, Board of Trustees Conference Room and Offices
- Russell House, Gamecock Court
- Russell House, Grand Market Place
- Russell House, Student Government
- Russell House, West Wing Remodeling
- Salkahatchie Entrance Road
- Salkahatchie Infrastructure Upgrade
- School of Public Health New Building
- Sumwalt Brauch Institute Move
- Sumwalt, Myrick Labs
- Sumwalt, Nano Center
- Thomas Cooper Library, Carolina Card System
- Walterboro Infrastructure Upgrade
- Wardlaw, 274 Offices
- West Quad Dorms

Initiated a project to document all communication facilities across the University. This includes:

- Identifying all copper, fiber and coax cables

- Identifying all cable pair to switch relationships
- Identifying all data port to room relationships
- Numbering all communication closets
- Locating all underground communication facilities including manholes and duct runs

Audited telecommunication service provider bills to identify cost savings. Disconnected approximately $60,000 of yearly billing. This will be an ongoing process for the coming year as existing point-to-point high-speed data circuits are moved onto the USC "Smart Ring" for additional savings.

Joined the PUPS distribution list to receive notification of planned excavation. This allowed Computer Services to locate and mark buried infrastructure prior to excavation in order to prevent service disruptions. Reviewed 52 PUPS notices from October thru December 2003.

Maintained the "Communications Cabling Installation Standards A1010" document which is a supplement to the American National Standards Institute, Telecommunications Industry Association and the Electronic Industries Association (ANSI/TIA/EIA) standards.

Identified and responded to security incidents.

- Worked with Network Managers, Student Judicial, Agent to Receive Notification of Copyright Infringement, and Law Enforcement to investigate security incidents and cases. Monitored new security alerts and system vulnerabilities and published warnings to the appropriate USC communities. There was an increase from 226 incidents in 2002 to a total of 3197 incidents handled by the security department in 2003. Handled 265 security incidents between January 1, 2003 and June 30, 2003 and 2832 security incidents between July 1, 2003 and December 31, 2003.
- Notified 78 external organizations on the Internet of various malicious activities being perpetrated against the USC network by one of their machines.
- Coordinated the incident response of major outbreaks of the following worms/viruses on the USC network: Opaserv, Slammer, Deborm, Blaster, Nachi, Sobig, SDbot, Aplore, Gaobot, and Mimail.
- Coordinated the incident response for the Blaster and Nachi worms in the Fall of 2003. On the first day of Blaster, approximately 3000 Faculty/Staff machines were infected and cleaned by departmental administrators and Computer Services. On Move-In Weekend, approximately 3000 of the 4000 students that successfully registered their computers on the network were also infected with Blaster and cleaned. During the rest of the semester, Blaster, and later Nachi continued to be a problem with the Security department identifying, documenting, blocking or notifying approximately 2127 cases.

Enhanced Security of the USC Network.

- Upgraded the two Internet Border Nokia IP 530 firewalls to two new Nokia IP 740 firewalls. Implemented load balancing of the new firewalls using the Cisco Content Switching Modules on the core and Internet routers. Maintained, patched, and upgraded the two Nokia firewalls and the Sun Solaris Checkpoint Firewall Management module to Checkpoint NG.
- Completed phase one of the Firewall Lockdown Project. Locked down the remaining 132 subnets of the total 281 subnets (47%). Compiled the documentation for the project. As part of Phase Two, eliminated ten remote administration services permitted through the firewall, moving the users of 87 of these servers to VPN solutions.
- Performed approximately 320 Nessus vulnerability scans on individual machines and one scan of the entire Registrar-Petigru network and the Carolina Card system and advised network managers concerning the results. Provided consultation services on risk analysis and remediation of vulnerabilities uncovered.
- Performed a network-wide password audit and discovered 85 machines with blank and/or weak passwords on Administrator accounts and approximately 1000 machines that had blank and/or weak passwords on Guest and various other user accounts. Contacted the network administrators and students to inform of the weak passwords and encourage good password practices and as a preventive measure to stop further worm infections through this channel.

- Installed a Cisco 3080 VPN server for the University community which is capable of terminating 10,000 concurrent VPN tunnels. The VPN provides a secure tunnel for the transmission of data across the Internet and can be used to terminate wireless VPN sessions to aid in security wireless transmissions. Created the VPN instructions and client software distribution website. Supported end-users of the VPN by registering new accounts and troubleshooting problems.
- Verified and updated the subnet security contact information and ensured that each subnet has a minimum of two emergency contacts.
- Migrated the NetReg network registration production and backup server to a new operating system platform and upgraded component software. Added 42 administrative networks to the Netreg system and supported the migration of those departments to Netreg. Enhanced the NetReg software for the Fall Move-In Weekend to check machines for the Microsoft RPC vulnerability and redirected machines to an alternate web page to download cleaning tools for the Blaster and Nachi worms, as well as the RPC patches before allowing them to register. Expanded the capabilities of the Netreg administration page to include a historical IP and MAC address usage search function and to correlate registrations with the Housing database and provide a searchable interface.
- Migrated the Nessus vulnerability scanner to a new operating system and upgraded component software.
- Upgraded and redeployed the Intrusion Detection Systems (8 systems) on the main routers around campus in conjunction with the backbone upgrades. Migrated the Intrusion Detection Master Console to a new operating system and upgraded component software.
- Worked on a security plan to remain in compliance with the Federal GLB Act.

Established a cross-University team to improve network security and authentication for the University network. Defined requirements for automated patch management, system registration and system validation to be implemented prior to fall semester, 2004.

Implemented or enhanced hardware and software tools to manage and monitor the University network.

- Acquired the SolarWinds software package and began to use for remote switch configuration, network traffic monitoring and troubleshooting traffic congestion problems.
- Created templates to allow mass upgrades and configuration changes thru CiscoWorks at substantial man-hour savings.
- Upgraded network IOS to allow trunking protocol and TACACS to be implemented for 96% of all switches. This allows for network verification of access to devices, download of configuration changes and the archival of configurations thru CiscoWorks. Implemented a project to install standard configurations on all switches to include password selection, NTP and SNMP access lists and ACS controls.
- Distributed over 300 customer accounts for the VPN: Approximately 50 accounts for Computer Services staff; nearly 200 for USC faculty and staff (not associated with CS); around 100 for students and another 18 accounts for vendors contracted with USC departments.

Added a second Packeteer packet shaper to load-balance Internet traffic to allow shaping of identical applications from two different sources and to provide a backup device for fail-over support.

Enhanced the University Data Warehouse

- Created new Data Warehouse Advisory Committee to review and provide input to Computer Services on Data Warehouse strategic initiatives. The committee will also assist with data stewardship functions, training and upgrade testing.
- Researched and planned upgrade of Data Warehouse hardware and software. Installed new database, web and reporting servers. Created a new Data Warehouse production environment. Upgraded new environment to the latest version of Cognos software, including new web portal. Upgraded production environment to use new Hitachi SAN storage device for increased space and better performance
- Re-wrote nightly jobs and backups for better performance, shortened time required for nightly processing and improved efficiency of current Data Warehouse environments.

- Based on requirements gathered from the business, began development of a Student Datamart to replace, enhance, and integrate the current processes associated with ad-hoc retrieval and reporting of basic student academic records data and to provide course and grades data that previously was not available on an ad-hoc basis to end users outside the Office of the Registrar.
- Began the planning phase for Alumni/Development for providing alumni names and addresses to target customers.
- Developed Home Department FTE (Full Time Equivalent) Table Maintenance application. This web-based application will be used to maintain a record of the number of FTEs per department over time. It will allow Human Resources to provide deans with information on changes/movement of FTEs when doing fiscal year comparisons. This application is awaiting final approval from HR and should be in production this spring.
- Loaded tuition data to the data warehouse and added new reports to provide deans and department heads with summary and detail information on tuition charged by campus, division, unit, department, course and section. This data is to be used for planning under VCM (Value Centered Management).
- Created a report for the Campus Bookstore to use each semester to assist the faculty in ordering textbooks.
- Created a download report for Human Resources and the Budget Office to aid in the calculation of terminal leave payout for TERI employees. The data is provided to Deans to allow them to plan for the budget impact of the second annual leave payout for TERI employees.
- Automated a process for verifying that all daily accounting transactions were correctly loaded to the data warehouse. In the event that the transactions loaded to the warehouse do not balance to the transactions in the mainframe accounting system, senior technical staff and accounting managers are notified so that the problem can be identified and corrected.
- Conducted a Human Resources Pilot. During the pilot, revised the security model to allow authorized Human Resources contacts to access only the data for their departments. Those changes are being implemented in the Human Resources data warehouse for a gradual roll-out this spring, making rosters and employee information available to Human Resources contacts.

Enhanced University Library Systems

- Changed the login for Infotrac/Discus to include social security number to ease off-campus access.
- Set up a process to automatically change library patron social security numbers using a file created from student record changes. This provides more accurate records and eliminates manual processes.
- Created the applications necessary for the automatic loading of BNA Shelf Ready materials into the NOTIS system
- Created a load process for Netlibrary I, II or III electronic books for campuses that purchase additional collections.
- Loaded and handled additional ID's for students that have multiple records (by School code) from campuses attended.
- Changed Patron Empowerment from the barcode ID number to social security number for login.
- Helped the Clemson library system support personnel resolve problems with the Patron Empowerment module, modifying the code and testing. This allowed Clemson patrons to access library information (books checked out, renew books, money owed) via the Internet.
- Modified and rescheduled batch computer job streams to reduce USCAN downtime.

Enhanced HR/Benefits/Payroll systems

- Automated payroll hand check entry to eliminate the manual calculation and coding of forms for keypunching. The new online program retrieves the next check number, accounts and deductions, calculates the appropriate taxes and net pay. Validation of data at real time eliminates the need to make subsequent corrections due to human error.
- Enhanced data collection for pay amount and FICA amounts to allow fringe benefits to be calculated and charged to appropriate Departments.
- Provided programming support for the addition of attorney fees on the 1099 form and the data reported to the IRS for 2003.

- Expanded the demographic segment on the HR database to provide the data needed for reporting on foreign nationals, immunization on faculty and staff, special events, institutional research and enhanced address information.
- Provided the Payroll Office with an online program for deleting social security numbers from the Student Hire database. This enhancement automated a manual process. Allowed Departments to enter the student's supervisor as the student is hired to support the ITAMS System. Streamlined the data entry process.
- Provided automation for reconciliation and integrity of premiums paid for spouse and Child State Dependent Life with the State's Office of Insurance.
- Added regulatory-required Federal tax tables and changes in fringe benefit rates to the Payroll system. Planned, coordinated and monitored the payroll year-end processing.
- Implemented a data exchange between International Support for Students for Faculty and Staff System and the Payroll/HR system. Provided weekly files to fulfill federal reporting regulations on international visitor and student data.
- Enhanced daily interface requirements to receive files from the SC State HR system.
- Completed initial analysis and design for changes to the manual check print process to an automated direct deposit system for accounts payable payments to vendors. This project, to be completed in 2004, will allow Accounts Payable to enter bank account and email notification data for vendors and provide for the transmission of payments made to these vendors to the bank in an ACH format.
- Developed employee self-service of payroll check deposit information within VIP. This feature allows employees to enter/change direct deposit banking information. This is an initial step toward eliminating the printing of payroll checks.
- Provided additional cost information to the Controller office in support of indirect cost calculations for FY 2002-2003.
- Added new options for State Long Term Care plan which required a one-time mass upload of premiums and a separate upload of selected options and the number of units the employee has purchased.
- Modified system to provide for qualifying employees working 20 hours per week to be eligible for benefits.
- Enhanced employee menu by adding a new screen to show all financial accounts from which an employee is paid.
- Separated the health and dental escrow portion of the fringe into separate accounts. New liability accounts and fringe accounts are assigned to identify the escrow portion of the fringe for the 9-month employees. Separate calculations are made in the fringe computation program.
- Automated catch-up health and dental employer fringes per payroll in order to recover the costs from departments which resulted from late paperwork.

Assisted Payroll in parallel testing and implementation of ITAMS (Time and Attendance) and completed requested interfaces to extract the payroll data required from USC's current payroll system. Interface data allowed ITAMS to provide leave balance, pay and time information for customer viewing. The new system allows employees to enter timecards and leave taken via a web-based application and allows access to leave history. As of December 31, 2003 approximately two thirds of the USC departments were implemented.

Enhanced Financial Aid System

- Made the modifications necessary to process federal financial aid for the 2003-2004 application year. This is a yearly requirement mandated by annual changes to the federal financial aid process.
- Expanded VIP to include State Certifications for LIFE, HOPE and State Need Based Grants. These new certifications allowed for electronic signatures which eliminated postage costs.
- Enhanced Financial Exception Letter Quality by utilizing fonts such as bold, italic and underline for student "exception letters" while still using the mainframe legacy "green screen" letter entry process.
- Added the required student certification forms to VIP, including state need based grants, Palmetto Fellows, Life Scholarship, and Hope Scholarship. This feature replaced the need for mailings, data entry and storage of these forms. Estimated savings for the Financial Aid office is $15,000 per year.

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Enhanced Educational Foundation/Development Office Systems

- Upgraded the Millennium system to version 7.2.1 which provided additional functionality and database enhancements.
- Separated 29208 zip code records and enlarged data fields to allow pledge bills to be printed at Printing Services which eliminated additional outside vendor costs.
- Enhanced the receipting process to include the Business Partnership Foundation and Development Foundation. Changed payroll jobs to carry and report on account group.
- Designed and implemented process to send lookup data to outside vendor for online giving.
- Created interface to allow source of gifts information to be available for retrieval by the Educational Foundation.
- Provided initial analysis and loaded Thomas Cooper Society members to the Millennium system and developed procedures to maintain information within Millennium. Created anomaly reports to aid in data verification.
- Loaded the endowed accounts, creating constituents, relationship and financial rows. Data will be pulled from Educational Foundation and Financial Aid information and enables the Development Office to automate year-end scholarship letters.
- Created a file for Harris Address Update of constituents and donors with invalid address information. The valid address information returned will be used to update the Millennium system.
- Identified and provided information which documented errors within the Millennium Software. The software vendor used the information provided by USC to make necessary functional corrections
- Installed new servers for the Millennium Constituent System.
- Created tables of "current year new monies" which the Development Office will use to determine success rate of current solicitations.
- Loaded email addresses and special interest attributes for graduates.

Enhanced Student Information Systems

- Implemented electronic acceptance of graduate application test scores (GMAT, GRE and TOEFL) through SPEEDE. This allows the graduate school to automatically receive scores for applicants and compare different sets of scores for the same test.
- Completed logic and reporting requirements to support the new Graduate School suspension system requirements.
- Completed programming to provide interface files to automatically update the status of international students for required reporting to the Federal Government.
- Began the conversion of the mainframe student transfer and advisement system (DARS) to the new Web based student access version (DARwin).
- Automated the uploading of the Recruitment database when prospective students make inquiries for application to USC utilizing the Internet.
- Provided an electronic admission upload for the Law School applicants to the mainframe student database from the LSAC admissions system.

Created extract files for import into the new food services CBORD dining system.

Provided analysis and design to support the implementation of Value Centered Management.

- Restructured student fees and developed the student fee assessment programs to take into account the new VCM fee structures which included ways for departments and colleges to assess program fees, departmental fees and special one-time enhancement fees.
- Created a data warehouse and reports to detail tuition generated at the individual course level.

Enhanced the University Housing System

- Tailored the housing applications for 2003-2004.
- Expanded the search criteria within the UChoose (University Housing roommate finder) system to allow students to search for potential roommates from their hometown, high school and major.

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Enhanced the Carolina Card System

- Enhanced the housing signup process to allow students to pay their room deposit using the Carolina Card.
- Modified the continuing and new student housing applications to allow dining dollars and Carolina Cash to be accepted.
- Added new workflow and screens to promote Dining Dollar or Carolina Cash accounts for use at Food Services and the USC Bookstore.
- Participated in the development of the RFQ for a new One Card system for the University campuses. The new card system will include identification card, debit card functions, vending, and dining. Participated in the evaluation of the vendor responses to the RFQ and helped in the development of a RFP.

Modified Institutional Assessment and Planning systems to increase the ability to accept additional data loads during the academic year. Instead of waiting to load student degrees once per year, USC can now load data as needed for each semester's graduation. This will expedite getting the information to Institutional Assessment's data warehouse.

Enhanced Visitor Center applications and web pages to better enable the Visitor Center staff to record walk-in visitors, no shows, and changes in participants. New reports were added for gathering statistical information. The evaluation form recording process was modified so that both the old and new versions could be used. A special event process was also added so that the staff can add, update, and delete events on the calendar. Installed AWStats statistical software to provide statistical information on visits to the Event Calendar web site.

Created new reports for Quarterly reporting of Inventory items for physical facilities.

Developed a Book Adoption web site to allow faculty to enter book adoptions for the coming semester online. This system will facilitate the ordering of books in coming semesters, provide the bookstore with up-to-date information on orders and link with VIP classes to determine the status of book orders.

Created a web-based strategic plan system for Institutional Planning and Assessment to allow administrative units to create, edit, and submit the annual strategic plan. The system allows for review and approval by the Provost and/or Institutional Planning and Assessment. This allows plans to be sent back to the Unit for revisions. This system streamlines the strategic planning process and reduces paperwork.

Created a web-based assessment tool for school programs to allow users to create, edit, and submit the annual program assessment plan. Users can create goals, objectives and assessments for the upcoming year and enter results from the previous year's plan. The plan is then submitted to the Provost and/or Institutional Planning and Assessment to be approved or rejected and can be sent back to the Unit for revisions.

Implemented phase one of the IBM Content Manager implementation to provide Enterprise Imaging services at USC. This new service allows departments to scan and view departmental documents over the Web. Phase one included a pilot group to test the usability, performance and cross-departmental access features of Content Manager. Procured and installed a system for document viewers. This provides a web interface for IBM Content Manager. Implemented IBM Content Manager for the following USC offices allowing the University to have a system wide method of archiving and retrieving records.

- SPAR - 5,000 documents in production
- Development Office - 1,796 documents in production
- Registrars Office - 12,201 transcript documents in production
- Student Financial Aid & Scholarship - working on business process documentation due first quarter 2004

GOAL 3: PROVIDE EXCELLENT CUSTOMER SERVICE

Provided a Help Desk for students, faculty and staff

- Processed over 33,826 phone calls, work orders and trouble tickets for Network, Telephone and Software Support. This includes creating, troubleshooting, routing, escalating, billing, filing, information gathering, follow up and handling all of the associated paperwork involved in getting the authorizations. The total included 20,775 student calls and 13,051 faculty/staff calls. August 2003 was the month with the highest call volume with 6,202 calls. Abandoned calls were 7% due to extremely high call volumes in August and September.
- Setup a cross-training program to increase the technical skills of the Help Desk and Desktop Support technicians. This increased the available staff and knowledge of both areas and enhanced the level of support provided to customers.
- Added extended web security to protect login access to the Help Desk system.
- Migrated the CSHelpDesk web site to a new hardware environment to improve service up-times and performance.
- Opened the Tech Lab for virus removal and cleaning, anti-virus protection software installation and updates, and warranty repair for Dell/Apple hardware for SLA departments.
- Created systematic methods and standard procedures for providing customer service and support. Documentation and defined business rules have increased the efficiency of the Help Desk.
- Incorporated the Computer Services lobby and Software Distribution into Help Desk to provide better service and functionality
- Help Desk co-located in the lobby allows walk-in customers to receive technical assistance such as configuration of laptops for wireless in public areas (Thomas Cooper Library, Horseshoe) and the Tech Lab.
- Merged Software Distribution and Software Support Services into the Help Desk to provide additional support and expertise to users when they call in for technical assistance.
- Created a total of 16,838 tickets (over 18% increase from 2002)
    - 4,305 Communications tickets
    - 6,675 Networking/LAN-WAN tickets
    - 4,720 Residence Hall tickets
    - 1,138 Software Support tickets
- Completed/Closed a total of 14,207 tickets
    - 3,661 Communications tickets
    - 4,782 Networking/LAN-WAN tickets
    - 4,664 Residence Hall tickets
    - 1,100 Software Support tickets

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

- Provided incoming students with necessary information on computing at USC and coordinated an increased Computer Services representation at Orientation. Provided one-on-one consultation to 3,524 incoming students at Orientation.
- Promoted IT services at USC Showcase while demonstrating new technologies
- Participated in planning, preparation and implementation of move-in 2003: including participation in student orientation sessions, pamphlet & website review, FAQ revisions, StudentIT revisions and planning sessions for move-in weekend. Worked with the University Bookstore to ensure they acquired the correct Ethernet cards, patch cords and Ethernet switches to make available to students. Worked with Housing to update the on-campus student technology services information available on the Internet and in brochures. Provided support for virus tickets and other problems that occurred at the beginning of the semester.
- Participated in Scholar's Day for prospective students and parents.

Continued the project to implement the Pinnacle Call Management system. Installed production and test Oracle databases for version 4.2. Completed the first draft of the conversion data models. Successfully integrated billing work orders and communication files needed to support the Pinnacle Human Resources interface. Established a version upgrade plan for migration to version 5. Installed training materials in preparation for in-house formal training and established formal training strategy for roll-out in July 2004.

Installed, tested and developed operating procedures for a bulk email system. This system will allow customers to send email based messages to unlimited numbers of email addresses. This will allow departments to save significant postage fees by converting general mailings to email. This system supports email information to students, faculty, and staff from USC departments.

Enhanced VIP web-based system to include additional new functions and self-service features.

- Implemented compliance with new Web Presence design guidelines
- Created a new demo system to enhance support of faculty and staff training of VIP functions.
- Created new functions to allow deposits to the Carolina Card
- Provided a method for students to access the National Student Clearinghouse to print official enrollment certificates free of charge
- Added new administration functions to allow authorized faculty/staff to view VIP data (address, grade report, unofficial transcript, schedule, eligibility, appointment time, degree application, and schedule and bill) for any particular student, allowing staff to view information as viewed by the student.
- Added an option for students to pay their enrollment deposit through VIP.
- Developed the summer Financial Aid application system to eliminate the paper process of applying and receiving summer financial aid.
- Added a feature to allow students to access Enrollment Verification information.
- Enhanced the functionality of the Faculty/Staff Parking Decals process.

GOAL 4: DEVELOP THE HUMAN RESOURCES WITHIN OUR ORGANIZATION

Participated in professional conferences and seminars including the BlackBoard User Conference, ACUTA 2003, AFCOM, BellSouth Major Client Association Conference, Novell BrainShare 2003, DARS Mainframe to DARwin Migration Conference, Educause 2003, EMC Executive Briefing, ESRI Users Conference, Fiber Technology Conference, Gartner Group Application Integration and Web Services Summit, IBM Content Manager Technical Conference, InAAU, Millennium Users Conference, NASAO Conference, Oracle World 2003, Pinnacle Users Group Conference, SC Aviation Association Conference, SC IT Directors Association Conference, Storage Management 2003, InfoTech 2003, International Avaya Annual Users Conference, Cognos Technical Users Conference.

Attended technical training required to support University applications including Microsoft Project, MacOS X, Mac OS X Server Essentials, AVAYA S8700 demonstration, BICSI Designing LANS and Internetworks, BICSI Introduction to Wireless Telecommunications Networks, Checkpoint NG with Application Intelligence Management I and II Firewall Training, Nokia Security Administration I Training, Cisco Security, Cisco Wireless/User Registration Tools/Authentication, ESRI Training, Cisco IP Telephony, SAS Programming, Sumaria Networks Training, Telephony & Technology Symposium, Microsoft Project and Project Central, PMBOK Project Management Program, FlashLight, Avaya MultiVantage Administration For Upgrades, Avaya Basic Switch Features and Administration, Cognos BI Administrator, Cognos PowerPlay, Cognos Tech Forum 2003, Java, Cognos BI (Business Intelligence) Administrators Fast Track, Cognos Impromptu Web Reports Administration, Cognos Impromptu Web Server Administration, Cognos Access Manager Administration, Cognos Upfront Administration, New Dimensions in Data Warehousing Seminar

Attended professional development training on business processes and management skills including procurement, University sponsored accounting and budgeting, Certified Public Manager Training, EPMS for Supervisors, Managing Information Technology (IT) Projects.

Obtained technical and professional certifications including Certified Public Manager (two staff members completed over 300 hours of coursework, an agency-specific project, and written examination from the Office of Human Resources, Budget and Control Board), Apple Certified Technician Certification, Dell Certified Warranty Repair Technician (Certifications for Dimension Desktops, OptiPlex Desktops, Dell Precision WorkStations, Dell Notebooks, and Dell Servers and Storage).

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

Compiled the State IT Plan for USC and Computer Services for fiscal year 2004/2005 for requests totaling $34M. Facilitated one-time IT approvals for research equipment and administrative purposes over $25K. This included lottery monies allocated to regional campuses

Supported 24x7 computer operations which included:

- Mainframe Scheduled uptime verses Actual uptime – 99.7 percent
- Tapes mounted – 481,450
- Batch Jobs Processed – 531,550 of which 184,340 were Production jobs
- Scanning processing – 1200+ graders, 150+ sets of teacher evaluations and over 200+ batches of other types of scanning. More than 296,000 forms were scanned.
- Data Entry Services – Weekly timecards (121,000+ per year), bi-monthly turnarounds (20,000+ per year), bi-monthly hand checks (200+ per year) and other applications.
- Maintained mainframe, Solaris and Unix machines supporting mission critical applications such as DNS and LDAP.
- Provided online report viewing through OnDemand for more than 3,628 reports.
- Supported core legacy systems including IMS, DB2, RACF, Decision Analyzer and other mission critical data support requirements. This included 229 IMS databases and 268 user defined DB2 tablespaces and DB2 system tables (production only). Supported 4,507,778 lines of COBOL code in 6,759 programs, 255,566 lines of Assembler/Format code in 868 members, 109,602 lines of Decision Analyzer and FDD code and 435,359 lines of JCL in 4968 members.
- Provided campus time servers, which can be used to synchronize computer clocks to a known accurate source.
- Installed the latest release of the mainframe MVS operating system (z/OS for the z-series operating system). This 64-bit version provides the best support and fewest problems. z/OS also provides secure FTP and 3270 connection capability while maintaining compatibility with existing connections.
- Upgraded hardware and software for the NetReg server, the intrusion detection systems, the Domain Name Server, Gamecock email servers and the firewall servers.
- Applied maintenance or installed new versions to subsystems supporting the University. Some of these were CA-7 (job scheduling), CA-11 (job restart), XPEDITER 7.2 (programmer testing tool), FileAid for MVS/IMB/DB2 (programmer data examination tools)

Supported the 24x7 operations for the University telecommunications and voice mail systems.

- Supported 4051 voice mailboxes for students, faculty and staff.
- Supported approximately 14,800 telephone lines for faculty, staff and students.
- Completed 3049 Phone and Voice Mail work orders
- Supported 94 automated attendants
- Supported an average of 7 conference calls per week

Supported the 24x7 operations of the University network.

- Supported more than 16,000 network connections.
- Supported more than 860 switches.

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Provided 24x7 service and support for Server and Desktop Support.

- Supported more than 50 NetWare file servers (including the University's consolidated servers which support 38 departments and over 1200 users)
- Supported more than 40 NT/2000 file servers
- Supported 3 MacIntosh servers
- Supported 100 servers on the Harbor backup system and 14 servers on the Veritas backup system
- Provided service and support for more than 1,600 users under the Service Level Agreement
- Added 22 Server Service Level Agreements, 3 Desktop Service Level Agreements, and the Carolina Card Service Level Agreement.
- Provided service and support for more than 6,800 students living in on-campus housing. Assisted with network connection to the backbone, software distribution, anti-virus protection and general computing at USC. Provided support during the January and August Move-in efforts, including helping the students moving from Holiday Inn's wireless network to the Ethernet network in the on-campus residence halls. During the Blaster virus and Nachi work attacks during the August 2003 Move-In period, the Help Desk peaked at over 1,500 calls per day and technicians had an approximate average of 400 open tickets for students each day for the two weeks after the Move-In weekend.
- Supported more than 125,000 user objects in the NDS Tree for faculty, staff, and student authentication. Verified the version of Directory Services on 102 servers in the NDS Tree and performed updates necessary to prepare for the installation of NetWare 6.
- Supported more than 80 network administrators on server, desktop, backup, and GroupWise issues.
- Modified the SLA Billing System to handle multiple types of SLA agreements. This change gives departments more flexibility to set up billing fees in support of new services being offered.
- Installed LDAP for VPN login access.
- Setup LDAP Authentication for USC Salkehatchie students with contextless login for their lab.
- Extended the schema in the NDS Tree for ZENworks v.4
- Reinstalled and reconfigured the Windows 2000 server for Human Resources, Video Bridge Conferencing System, and Printing Services.
- Installed and configured 2 Mac servers for the College of Journalism.
- Moved the web site for the USC Mac Users Group (USCMUG) to newer hardware.
- Upgraded the ReDiscovery Application for the McKissick Museum.

Performed several major upgrades to the Server Farm to increase the speed, performance, power redundancy, and manageability of the infrastructure and systems in the Server Farm which houses mission critical applications, data and services. Installed two chassis based switches within the server farm area, a Cisco 4506, and 4507 to allow for Gigabit connectivity.

Supported the public labs at Thomas Cooper Library

- Maintained two PC images and two MAC images for the TCL Level 5 Computer Lab
- Maintained four PC images for the Business Library Computer Lab, the TCL Reference Pods, the Music Library Computer Lab, and the TCL Science Lab.
- Created new images for the TCL Reference Pods, the Music Library Computer Lab, and the TCL Science Lab.
- Installed a Mac server and implemented LDAP authentication to access Mac computers in the TCL Level 5 Computer Lab.

Supported the 24x7 operations of the GEM E-Mail system

- Supported more than 114,000 accounts used by approximately 25,000 people
- Processed 25,000-100,000 pieces of email daily. This is a decrease of approximately 25,000 messages per day from last year at this time due to SPAM filtering.
- Configured, tested and deployed new GEM web front-end with more features and improved response. Updated documentation, publication notices and support.

- Added several internal improvements to improve GEM performance including moving data to the Enterprise SAN.

Configured, tested and deployed two new SPAM filtering machines located at the USC network border. Phase one of the implementation to drop email connections from known spammers has reduced campus SPAM by approximately 20-25%.

Supported the Groupwise email system**.**

- Supported more than 6,380 GroupWise mailbox accounts.
- More than 9 million Groupwise messages were processed per month.
- The virus scanning servers for the GroupWise email system clean or block an average of 10,000 viruses per month. This number has decreased due to the filtering that is occurring at the border of the network.
- Consolidated the College of Journalism into the GroupWise system.
- Migrated the Nursing Post Office and Domain to POCOLA7 in the existing Columbia Domain.
- Began managing the College of Liberal Arts Domain and 4 Post Offices (approximately 1,000 mailboxes).
- Installed GWAVA to scan all incoming and outgoing Internet email and internal email for viruses for the USC GroupWise System and the Columbia College GroupWise System.
- Created an LDAP Address Book for GroupWise addresses.
- Completed the GroupWise 6.5 and 6.5.1 System Upgrade Project, which upgraded the core GroupWise System, and all 13 Domains and 24 Post Offices to 6.5. This included the GroupWise systems for the Regional Campuses.
- Re-tasked the Groupwise Server hardware to maximize the performance for POP/IMAP, routing of internal GroupWise email, and Web Access.
- Installed SSL for the GroupWise POP/IMAP server to provide encrypted data transfer of email to and from the GroupWise servers.
- Upgraded the servers for the POCOLA Post Offices to Gig connectivity to the USC Network
- Discontinued the NET: and NURS Domains
- Beta test site for the *nix GroupWise Client, which is used by Unix and Macintosh systems.
- Updated Introduction to GroupWise and Advanced GroupWise classes and class handouts to new version.
- Taught Introduction to GroupWise, Advanced GroupWise and Upgrading to GroupWise 6.5.
- Redesigned and deployed the GroupWise Support website.
- Massaged raw data of GroupWise POP users and prepared report for GroupWise Administrators to use in their efforts to eliminate GroupWise POP.
- Researched IMAP solutions for GroupWise POP users, developed tutorials to assist users in the transition, and wrote descriptive emails about the transition for the GroupWise Administrators to send to affected users. Designed and developed documentation on how to IMAP GroupWise and access the GroupWise LDAP directory for the following clients: Microsoft Outlook, Microsoft Outlook Express, Eudora for Windows, Eudora for the Mac, OSX Mac Mail, Netscape for Windows, and Netscape for the Mac.
- Developed GroupWise single-subject documents for the GroupWise website.
- Supported more than 2,150 GroupWise mailbox accounts for the Columbia College Groupwise system. Maintained SLA Support for Groupwise email service and system level support for Columbia College faculty, staff, and students.

Supported the 24X7 operations for the University ListServ server.

- approximately 700 lists
- 15,000-50,000 messages per day.
- Upgraded server and migrated data.
- Provided education and support for list subscribers and owners for the web interface of new LISTSERV.SC.EDU server.

- Updated documentation/web sites/list request web scripts for new server procedures.
- Updated security measures for lists given web accessibility. Added several security features to all individual USC lists to prevent likelihood of spam/spoofing
- Rewrote list request web pages and web scripts as well as execs for creating lists to greatly simplify procedures and wrote detailed documentation on these procedures.
- Performed semester-end class list archive cleanup and prepared for spring 2004 removal of old lists.

Installed, patched and secured, and provided support for new, high-performance, redundant NetWare Servers for the following University-wide applications:

- GroupWise (Computer Services): Seven new NetWare 6 servers were installed to upgrade and replace old hardware for the POCOLA1-7 post offices. An additional NetWare 6 server was setup for the main SMTP server for Internet GroupWise email, GWAVA, and internal routing of GroupWise email.
- The General Ledger System (Business and Finance): A single server was installed with NetWare 6 to run the University's General Ledger Application for Business and Finance. This server replaced old hardware running an older version of NetWare.
- Software Distribution and Anti-virus Updates (Computer Services): A single server was setup to upgrade and replace the existing server used for software distribution and anti-virus updates.
- Authentication Services (Computer Services): Upgraded servers to NetWare 6 to support Authentication and LDAP services for Faculty, Staff, and Students.

Installed, patched and secured, and provided support for new, high-performance, redundant Windows 2000 Application Servers and Windows 2000 Database Servers with SQL Server 2000 for the following University-wide applications:

- The Student and Exchange Visitor Information System "SEVIS" i1440 compliance software (Student Affairs): A single server was configured with SSL to provide encrypted data transfer during the batch upload to SEVIS and utilizes Crystal Reports Professional Edition for reporting. i1140 was developed by the Immigration and Naturalization Service (INS) to provide tracking and monitoring of non-immigrant student, exchange visitors, and their dependents. Federal regulations require universities to use this system for reporting activities.
- The LaserFiche Imaging System (Graduate School, Financial Aid, and Registrar's Office): A single server runs this application which provides for the electronic storage of financial information for consideration of loans and grants, transcripts, name changes, address changes, etc., and all documents involved in the application process (the application, test scores, letters of recommendation, admission decision action sheet and letter, and the program of study).
- The USC Electronic Research Administration (USCeRA) application (Sponsored Programs and Research): A single server utilizing SSL and Apache runs this system which is used by USC Faculty to submit their research for externally sponsored funding.
- The "ITAMS" Time and Attendance Your Way System (Payroll and Business and Finance): Four servers were configured to run this system which allows for the electronic entry and processing of employee time cards and turn-around documents.
- USC Departmental web sites and SC Department of Social Services web server (Computer Services Contractual Services): Two servers were installed to host web applications and databases for USC departments. Also reinstalled and secured another Windows 2000 Server for the SC Department of Social Services to provide Independent Verification and Validation (IV&V) services for the Child Support Enforcement automation project called CSES through an inter-agency agreement with the University.
- Enterprise Information Portal "EIP" application (Computer Services Systems): This single server runs the University's Imaging Project Pilot, which is a mid-tier application that allows users to access mainframe information via the web.
- Blackbaud Accounting Software application (University Foundations): A new server was installed to allow for the upgrade to the Blackbaud accounting software, and the existing server was reinstalled to allow various departments to attach to a copy of the Blackbaud database to view accounts and grants.

- The Clinic Management System software (Student Health Center): This single server runs the Clinic Management System and is required to be HIPAA compliant. It was the first server that was successfully configured with Dell Remote Access Card (DRAC) to securely access a server remotely for administration purposes.
- Web and Database Server (NanoCenter): This single server stores databases and acts as a web server for access to departmental data.
- CiscoWorks system and the TACACS system (Computer Services LAN/WAN): These two servers manage, maintain, and secure the infrastructure for the USC Network.
- Millennium (Development, Alumni, and various other campus departments): Two servers were installed to run this web-based system to manage contact information for people affiliated with the University.
- Degree Audit Reporting System "DarWin" (Registrar's Office): A single server used to list the course requirements that students need in order to complete their chosen degree.
- Pinnacle Pinnlink (Computer Services): A single server to poll for long distance and create the billing records.
- HiCommand for Hitachi (Computer Services): This server was setup to manage the Hitachi Enterprise Storage Area Network (SAN).
- USC Departmental web sites "Small Webs" (Computer Services Administrative Information Systems): Two servers were installed to host web applications and databases for USC departments, such as Visitor's Center and Event Calendar.
- Data Warehouse (Computer Services and numerous campus departments): Three servers were installed to host the upgraded version of the Data Warehouse.

Upgraded the Veritas Backup System to Veritas v.9.0, which is used to backup and restore GroupWise email and the Root of the NDS Tree. Veritas v.9.0 has support for NetWare 6 and NSS Volume types.

Upgraded and patched the new Consolidated Servers to prepare for the migration from older servers. To secure, standardize, and improve productivity, migrated the following SLA departments to the new Consolidated Server SAN environment, performed security updates, patches, and standardization of the desktop configurations, registered every user using the NetReg registration tool, and moved to secure VLANs running DHCP: University Press and Press Warehouse, Computer Services and OIT, President's Office, Provost Office, Special Events, Board of Trustees, System Legal Department, Office of Research, Human Resources, Development, Graduate School, SPAR, Consolidated Services, Center for Child and Family Studies, BRIN, Carolina Card, Business and Finance, Faculty Senate, Fellowships and Scholar Programs, Institutional Planning and Analysis, Equal Opportunity Programs, University 101, Post Office, University Foundations, NanoCenter, Animal Research, Registrar's Office, Visitor's Center, the Southern Association of Colleges and Schools (SACS), McKissick Museum, and TRIO Programs. Additional migrations are scheduled so all SLA departments will be migrated to this standard environment. Consolidated the departmental servers for Human Resources and Institutional Planning and Analysis during the migration to the Consolidated Server SAN environment.

Successfully deployed McAfee Enterprise version 7.0 virus software and rewrote web pages and instructions for downloading, installation and use.

Supported the 24X7 operations of the University web presence

- Developed web sites using the new web standard for Computer Services, Campus Planning and Construction, Facility Services, Educational Leadership and Policies, Office of Program Evaluation, Children's Law Office, USC BusinessLink, USC Gateway Academy, Printing.
- Developed web sites for the Department of Student Life (Parents Weekend Registration), Capitol Tickets and Coliseum, USC School of Medicine Department of Geriatrics
- Maintained University web sites, including the USC home page, Computer Services web site, Bursar web site, USC Map, A-Z Index, USC search engine, Office of Research, School of Music, Office of Program Evaluation, Office of Pre-Professional Advising, Equal Opportunity Programs, Norman J. Arnold School of Public Health, USC Post Office, Institute of Public Service and Policy Research,

BRIN EPSCOR, College of Engineering, College of Social Work, Business and Finance, Center for Child and Family Studies, USC Alumni Association, Faculty Senate, Nanocenter, Parking and Administration.

- Handled an estimated 2500 inquiries sent to the USC Webmaster, USC Map, Search USC and VIP.
- Combined GRIN and StudentIT sites to provide a more customer-friendly web site for all USC students.
- In the capacity of "Agent to Receive Notification of Copyright Infringement," worked closely with Student Judicial Programs, the Office of the General Counsel, and the University Data Security Officer on sensitive security and copyright violation matters. Since January 2003, the Agent has disposed of an estimated 300 copyright infringement notifications brought against the University.
- Maintained the hardware, system and security of three production web servers: www.sc.edu, web.csd.sc.edu, albus.csd.sc.edu and vip.sc.edu.

Worked with the Bursar's Office to develop a plan to create and implement an ecommerce site to provide a standard way of collecting payment on the web. Ecommerce at USC has been an inconsistent and manual process for many departments and colleges. This system (which will move to production in early 2004) will allow for the acceptance of credit card payments for merchandise and conferences and will be integrated with the USC general ledger and receipting system.

To comply with HIPAA, completed site visits and recommendations for data security and privacy protocols at the USC Speech and Hearing Center, USC Lancaster(White Clinic), Thompson Student Health Center, USC School of Public Health and USC School of Medicine. Each unit acted individually to develop recommendations and implement measures to protect Health related data associated with student, faculty, staff and patients of the University of South Carolina medical facilities.

Negotiated substantial discounts for institutional and personal purchases for a number of standard desktop and laptop computer configurations from Dell, USC's preferred PC vendor. These prices will result in substantial savings for the University and represent an average 15% savings over previous discounted prices. The reduced cost includes the USC standard software image preloaded by Dell to improve IT security and reduce configuration time. The image includes Microsoft Office Professional and McAfee Virus Scan Software. All available security patches and critical updates have been applied, and the Windows XP Internet Connection Firewall has been configured to add another level of security. A folder on the desktop affords the option to install additional standard USC applications such as the Novell client, GroupWise, Adobe Acrobat Reader, VPN Client, Host Explorer and OnDemand.

Provided support for the Presidential Debate sponsored by South Carolina Democratic Party and the ABC News Program "This Week with George Stephanopoulos". Setup computers, printers, network connections and telephones to support the media covering these events.

Lead the effort to replace or eliminate SNA communication devices still in use at Computer Services and throughout the campuses. This migration to newer technology from this old protocol reduces costs by eliminating the expense of maintaining two separate network connections and duplicate equipment. These devices were no longer covered by vendor maintenance agreements. Converted all SNA output (with the exception of a few special forms) by June 30, 2003. Continued support of this network would have cost around $100,000 of one time money and a recurring cost of $30,000.

Implemented an Enterprise storage area network (SAN) architecture to consolidate storage for enterprise applications that can now be leveraged for providing high availability storage for administrative and research data. The storage architecture is designed with redundancy built-in, protecting against any single point of failure, including failure of an individual disk, power supply, or fiber channel connection to the storage. Included in the consolidated storage is:

- Over 700 Gb of Mainframe Data Storage (Further redundancy is provided for key application data via mirrored volume pairs)
- BlackBoard Course Content Data

- Key Administrative Applications (Millennium, Data Warehouse, Pinnacle, Millennium, Other Web Applications)
- Administrative File/Print Data
- Gamecock Email and ListServ Data
- GroupWise planned for first quarter 2004
- ITAMS planned for first quarter 2004

As a result, several older generation systems were discontinued including DELL PE 650 SAN architecture. (Windows & Netware), Hitachi 7700 subsystem (Mainframe & Open Systems) and all mainframe RAMAC (ALL DASD mainframe storage has been consolidated onto the 9980).

Installed an enterprise UPS to provide battery back-up and power conditioning for non-mainframe enterprise systems. The UPS maintains power during a short power fail interval and provides for graceful shutdown of servers and systems in an extended outage. The UPS currently protects the consolidated enterprise storage (including all mainframe DASD), the CISCO fabric switches, various network security servers and firewalls.

Utilizing consultants from Beta Systems and Hitachi, conducted a complete audit of the Harbor Backup System. Plan to implement recommendations from the audit to increase the performance of critical system restores and to improve the overall recoverability of enterprise applications.

Upgraded the Virtual Tape Systems (VTS) to continue the support of Enterprise applications and development. This upgrade increased the capability of these devices by doubling the speed and tripling the storage capacity. This places Computer Services and the University is a position to handle the continued growth of storage requirements throughout the enterprise.

Researched, planned and coordinated the purchase of new 3090E tape drives to provide important research data to several faculty members. Worked with researchers in various departments (Institute for Families in Society, College of Pharmacy, School of Public Health) to determine and respond to requirements for reading mainframe magnetic tapes written in 3490 36-track format. Assisted researchers in reading these tapes after 3490 drives were installed.

Constructed a secure testing lab for network, security and server equipment. Enhanced the Test Lab to improve on the original design and allow for the testing and evaluation of the Iris enhancements, NetWare 6, Native File Access for Macintosh, Mac OS X, GWAVA for GroupWise Virus Checking, NetMail, XP Home Edition, MS Project Server, NDS for NT, Windows 2000 Active Directory, etc.

Improved internal business procedures

- The Business Office, Help Desk, Communications and LAN/WAN group worked together to refine internal business processes to assure access and availability to information, reporting, monitoring and billing of voice/data and network requests.
- Established a procedure for the University community to submit requests for pager, cellular, account number changes and calling cards through the Computer Services Help Desk online ticket system. This enhancement allows the customer to track the status and outcome of departmental requests and provide a historical record of departmental requests.
- Provided an online standardized account number change to allow University departments to submit billing account and fund changes for pagers, cellular and other voice/data services. Added ability for University departments to view, inquire and retrieve the status of requested account number changes via the Computer Services IRIS ticket system.
- Added a pager request form to allow University departments to order, cancel and make pager changes.
- Worked with the Office of the State CIO to secure authorization to obtain cellular invoices electronically from state contract providers. This will allow University departments to view cellular call record information via OnDemand. Implementation for departmental use is expected by the end of 2003-2004.

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- Acquired the support of the Bursar's Office and the Registrar's Office to utilize a state approved collection vendor to recover student long distance accounts via a secure link. Implementation expected to be completed by June 30, 2004.
- Worked with the Division of Business and Finance to develop a conversion plan for cellular and pager services. This conversion plan supports USC IT Policy 2.18 which grants authorization to the responsibility unit to order services and/or equipment, make changes to pager/cellular services in accordance with the state contract and manage payments via the University purchasing card. The conversion deadline for all campuses is June 30, 2004.
- Developed a contract database and purchase requisition tracking log. This system allows for accurately tracking contracts (terms and description) and purchase requisitions. Planned to incorporate scanned images of documents as part of the contract database system. This enhancement will enable images of the contract and other supporting documentation to be attached for review and electronic distribution.
- Worked with cellular vendors and the State CIO to ensure approved state contract discounts are included on vendor invoices for USC cellular accounts. In addition, corresponded with the State CIO and cellular vendors regarding miscellaneous fees. The state contract provides that each vendor allow discounts on monthly access charges as part of the state contract. Miscellaneous fees can not be assessed to agency invoices without the vendor working through the State CIO to ensure the state contract is modified to incorporate such fees.
- Consolidated all external vendor billing (pagers, cellular, non-777 lines, etc.) into a single billing system so that all telephone billing (monthly recurring, voice mail, repairs, installs etc., and non-777 services) bill on one invoice. This enhancement allows each department to view charges online via OnDemand as well as provide a historical record of the transactions.
- Worked with the USC Police Department to set up Computer Services response teams in response to terrorism threat levels, crime reports for parking lots, theft and vandalism.
- Established a time-based storeroom inventory system.
- Provided direction and assistance in the planning, reservations and payment for travel to various conferences, training and seminars for numbers of CSD staff. Handled paperwork, reservations and reimbursement for consultants and interviewees.

Made major enhancements in the South Carolina Arts Assessment Program for the College of Education. The SCAAP is a 10-year project with the purpose of developing standards-based arts assessments for grades 4, 7, and 10 in each of the arts areas: dance, drama, music, and visual art. The SCAAP website enables student, teachers, and administrators to create and administer online tests for students. It also allows administrators to evaluate student results and compute a statistical analysis of these results.

Redesigned the Extended Graduate Campus (EGC) Requests system. This system allows assigned users in the three regions of SC to request specific courses to be taught in the area. Users can track the status of requests and EGC-provided reports. This system will provide a web interface to make it easier for all users (requestors and administrative staff) of the system to perform duties in a faster, more cost effective manner with less effort.

Developed a mail forwarding system for the USC Post Office which provides a series of reports and label options including printing over 6000 PO Box labels for the Russell House. The system receives daily downloads from the mainframe in order to add, update and/or remove records from the address system. This system provides ad-hoc searching and reporting capabilities to meet Post Office requirements.

Developed a Prevention Research Center Research tracking database for the Arnold School of Public Health. This system will aid in the collection of a HPV Research Study, allow for the input of databased on a questionnaire format and generate export files and reports.

Converted the SC Elementary Committee DOS-based system to a database system. The SC Elementary Committee is charged with creating peer review groups for Elementary and Secondary schools, and this conversion will allow for better services and coordination with the regional headquarters in Atlanta.

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

Represented USC at SC ATAC (SC Assistive Technology Advisory Committee) meetings; Worked on various workgroups - Web Policy, Outreach, Training, State Government Webmasters

Rewrote ANNOUNCE service website and associated pages to greatly simplify process of adding updates.

Worked with the Library and University 101 in the planning and implementation of a CD containing information about information technology at USC for incoming freshmen. The CD will be distributed to incoming students at Orientation.

Expanded the Port Network (EPN) for the Lancaster Campus off the USC Columbia G3R telephone switch**.** This provides Lancaster campus with Columbia local dialing access, use of the G3R features and use of the voice mail system.

Participated on a variety of University committees including Value Centered Management, University Information Technology Council, Distributed Learning, Network Managers, Family Fund, Registrar Council, USC Admissions Officers, GroupWise Managers, BlackBoard planning committee, Authentication committee, Move-In committee, Registration Process Review committee, Visions and Future directions sub-committee, Security Team, MAC Managers, MAC Users Group, ColaMUG Group, HR IT Curriculum Committee, Facilities Deferred Maintenance Committee, Distance Education Advisory Committee, Electronic Thesis and Dissertation Task Force, Faculty Senate and Website Accessibility and HIPAA Steering Committee.

Participated in the INFOTECH 2003 conference hosted by the College of Liberal Arts. Computer Services staff members presented technical sessions on a variety of topics including Using LDAP Authentication & SSL to secure Apache Web Server and Security (Protecting the Corporate Cookie Jar).

Addressed IT surveys for higher-ed organizations, USC Archivist, ITMO survey to upgrade or create new state contracts, survey of roof top usage for antennas and provided management with responses for IT survey by MIT auditors.

Through the Contractual Services Group, supported other state agencies and entities.

- Supported the State Agency Accounting System (SAAS) for 4 state agencies.
- Supported the Basic Agency Reporting System (BARS) for 19 State Agencies. The BARS IV General Ledger System is designed to fulfill the needs of small state agencies. The system interfaces with the Statewide Accounting and Reporting System (STARS) requirements, and Governmental Accounting, Auditing, and Financial Reporting Procedures (GAAFR). The BARS IV General Ledger is a double entry modified accrual accounting system. It is structured to be self-balancing by funds and fund groups. BARS also has modules for leave, personnel, and fixed assets.
- Provided support for the NSLDS System used by the SC Student Loan Corporation. This system is used to report outstanding student aid loans to the US Department of Education.

UNIVERSITY OF SOUTH CAROLINA
COMPUTER SERVICES
2003 Accomplishments

- Provided IV&V Oversight for the state-wide child support enforcement system to meet Federal certification requirements. Provided comprehensive assessments of CSES activities to the SC Department of Social Services and the Federal government on a quarterly and mid-quarter basis. In this role, the IV&V project team is essentially serving as 'the eyes and ears' of the Federal government which is funding two-thirds of the cost of development.
- Working with the State and Federal Geodetic Survey Offices, developed an application to assist surveyors in the state of South Carolina with the identification of horizontal and vertical control points. These points are used to tie mapping projects to a known coordinate system for accuracy and elevation. This application, StationView 3.3, is sold through the USC Research Foundation.
- Continued support and development of the CAIRS client server product and web presence for the SC Department of Commerce, Division of Aeronautics
- Implemented a Content Management System for the SC Chief Information Officer and provided training to staff.
- Continued work with web development for the Public Service Commission Intranet and web presence for the public. Designed a public complaint system and began design of a GIS mapping site for the web.
- Continued work with mapping projects to supplement the Suwannee River Water Management District staff.
- Completed the Kershaw County parcel pilot project and start up of parcel project to complete the parcel base for the county. Estimated 3 year project working with the County Assessor.
- Provided AS400 support and maintenance for the accounting systems in the following agencies: SC Student Loan Corporation, Fairfield County, Consumer Affairs, Labor Licensing and Regulation, SC Parks Recreation and Tourism, SC Department of Archives and History
- Provided support for the enterprise server databases for Medical Examiners, Dentistry Board, SC Retirement Systems, and BCB Office of Research and Statistics. Support involved tape conversions, FTP access, and file changes.
- Provided support for the SC Student Loan Corporation NSLDS System National Student Loan Department Services which must report to Department of Education all outstanding student aid loans. During the year, performed a variety of requested duties to support the organization.