

**The California State University  
Annual Campus Technology Survey  
Fiscal Year 2001/2002**

**Survey Clarifications**

**Integrated Technology Strategy - Technology Infrastructure Initiative (About this Survey)**

The Integrated Technology Strategy or ITS is a comprehensive technology planning framework and process of the California State University. Approved by the Executive Council and endorsed by the Board of Trustees in 1996, the ITS is systemwide in scope, encompassing all 23 campuses. It is centered around a series of programmatic initiatives designed to improve student learning and the quality of the student experience generally, and to increase levels of personal and administrative productivity. A detailed overview of the Integrated Technology Strategy is available as a downloadable file on the ITS Web site. Point your browser to <http://its.calstate.edu> and click on "ITS Planning and Implementation Process."

The Technology Infrastructure Initiative addresses the baseline utilities, hardware, software and user training and support systems, which are prerequisites for full implementation of the Integrated Technology Strategy. Accordingly, the ITS-TII has the highest priority among the ITS initiatives. It is the technical foundation on which all programmatic initiatives depend. A detailed description of the target environment is available on the ITS Web site <http://its.calstate.edu> by downloading the document entitled *TII Status and Directions*.

**Support faculty involvement (#1)**

Information about faculty use of technology-mediated resources in connection with their teaching is collected in the biennial faculty survey. This survey seeks information about redirection of campus resources (or acquisition of new resources) for the purpose of enabling faculty to engage in the *creation* (including field testing) of such materials. Creation or production of materials in the intended sense will normally require faculty access to some combination of technical assistance, specialized facilities, equipment and application development tools, specialized training, and/or redirection of a portion of the instructional assignment for a specified period. Requiring students to use email or to access Web pages to complete course assignments, for example, does not qualify as "faculty involvement" for purposes of this survey. Personnel years are the principal indicator of campus support. In calculating dollar mounts for this survey do not include imputed costs for administrative or infrastructure services that are necessary, but indirectly related to carrying out relevant activities.

**Technology-mediated instructional or learning materials (#1)**

For purposes of this survey, "technology-mediated instructional or learning materials" means any instance of the use of computer- or network-based technology to communicate, or to facilitate the acquisition or demonstration of, knowledge or skills associated with an academic program. Examples range from the use of computer-based presentations in classrooms to individual student involvement in research employing sophisticated computer-based simulations; from the required use of e-mail or electronic retrieval of course-related information resources (from a library, online data repository, the World Wide Web, etc.) to participation in courses via the Internet, or televised instruction via satellite or other medium.

**Automated means (#3)**

This refers to the ability for regular patrons (e.g., enrolled students, university faculty or staff)

to request library resources from other libraries without the assistance of a desk clerk or other personnel.

### **PHAROS (#3)**

PHAROS is the name of the web-based, unified information access system developed by epixtech, inc. (formerly Ameritech Library Services) and the CSU. Among other features, PHAROS enables automated processing of end-user submitted requests for materials available from sources outside the local library using the Resource Sharing System (RSS). When fully implemented PHAROS is expected to reduce significantly the turn-around time for delivering requested materials. Detailed information about PHAROS is available at <http://uias.calstate.edu/UIAS.shtml>.

### **CMS PeopleSoft functionality (#4)**

As used in the survey, "CMS PeopleSoft functionality" means the capability to support specific business processes-e.g., "Time & Labor" in the Human Resources Information System or "Accounts Payable" in the Financial Information System-using CMS-developed PeopleSoft software applications. The purpose of this item is to track in broad outline the progress of CMS implementation across the system through the year 2008. Adoption of any functionality is interpreted as an indicator of eventual conversion from the legacy environment to the Common Management System.

### **computers did the university provide (#6.1)**

Only computer workstations (desktop and laptop computers) purchased and supported by the institution should be counted in responding to questions in Section 6. The decision of whether to include in the current report computers purchased during the 2001/2002 fiscal year, but not yet placed in service, is up to the campus. Differences in campus asset management practices are not as important for this survey as consistency from year to year in how this information is reported.

### **ITS-TII baseline hardware standards (#6.1)**

Minimum standards to guide campuses in the purchase of computer hardware were recommended in fall 1998 by the Systemwide Internal Partnership. The Information Technology Advisory Committee approved revised standards in fall 2001. It is assumed that equipment with the capabilities described in the standards will provide useful service for a period of three years.

To qualify as "meeting ITS-TII minimum baseline hardware standards," computer hardware purchased in fiscal years 1998-99 through 2000-2001 must generally meet or exceed the capabilities described in the center column ("1998/99 - 2000/01 Standards"). Computer hardware purchased in fiscal year 2001-02 must generally meet or exceed the capabilities described in the right-hand column ("2001/02 - 2003/04 Standards").

### **Recommended Minimum *Desktop* Hardware Standards for Windows Platforms**

<b>Component</b>	<b>1998/99-2000/01 Standards</b>	<b>2001/02-2003/04 Standards</b>
Processor	Pentium ® II; 350MHz with Intel 440 BX chipset	866 MHz

Memory	64 MB of 100MHz SDRAM	<i>256 MB RAM</i>
Cache	512 KB L2 cache integrated into the processor cartridge	
Flash BIOS	2MB Flash memory	
Graphics ('98); Video RAM ('01)	8 MB of 1000MHz SGRAM, Advanced Multimedia Channel (AMC) video port. Diamond, Matrox or ATI 64/128 bit ABP board	<i>8MB (16MB encouraged)</i>
Audio	Integrated full duplex audio (Sound Blaster Pro and Windows Sound System compatible). External connectors for microphone, stereo input and stereo-amplified output for speakers or headphones	
Hard Drive ('98) Hard Disk ('01)	6.4GB	<i>10GB</i>
EIDE/Management	EIDE Controller Integrated PCI	<i>DMI 2.0</i>
Floppy Disk ('98) Writable ('01)	Integrated floppy diskette drive support 3.5" 1.44MB diskette drive standard	<i>1.44MB floppy drive; 250MB ZIP as needed</i>
CD-ROM ('98) CD Drive ('01)	20 x CD-ROM	<i>CD-RW (DVD/DC-RW encouraged)</i>
Data Backup	Internal	
NIC	10/100Mb Fast Ethernet with ACPI and Wake-up on LAN support, 10/100Base-TX, RJ45 twisted pair connector	<i>10/100, Wake-up on LAN</i>
I/O Connectors ('98) USB ('01)	2 USB, 2 serial, 1 high speed ECP/EPP parallel port, 1 PS/2 mouse, 1 PS/2 keyboard	<i>Required</i>
Expansion Bus	PCI, ISA, ACP and USB	
Standards	(ISO) 9002/ANSI/ASQC Q9002	
Monitor	17-inch FST with 0.27 dot pitch. Power consumption under 100W, 1024 x 768 resolution at 90Hz	<i>17-inch, .28 dot pitch (for power conservation, flat panel encouraged)</i>
Sound	Built-in stereo amplifier with 5 watt speakers. Built-in	

	directional microphone. Low emissions, strict safety standard compliance	
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**Recommended Minimum *Notebook* Hardware Standards for Windows Platforms**

<b>Component</b>	<b>1998/99-2000/01 Standards</b>	<b>2001/02-2003/04 Standards</b>
Processor	233 MHz Pentium II with Intel 440BX chipset	600 MHz
Memory	64 MB of 100MHz SDRAM	158 MB RAM
Graphics ('98); Video RAM ('01)	4 MB of 1000MHz SGRAM,	8MB
Video Out		Required
Sound	16-bit SoundBlaster ® Pro compatible voice and music function	
Hard Drive ('98) Hard Disk ('01)	4.0 GB hard drive	10GB
Modem	56Kbps, V.90 upgradeable	56K, V. 90
Writable ('01)		1.44MB floppy drive; 250MB ZIP as needed
CD-ROM ('98) CD Drive ('01)	20 x CD-ROM	CD-RW (DVD/DC-RW encouraged)
NIC		10/100
External Ports ('98) USB ('01)	Parallel, serial, VGA, PS/2, IRDA 1.1, USB, and docking port	USB required. Docking station encouraged for primary workstation
Weight	Maximum 8.0 pounds	
Display	12.1-inch TFT XGA display	12-inch TFT

**Recommended Minimum *Desktop* Hardware Standards for Macintosh Platforms**

<b>Component</b>	<b>1998/99-2000/01 Standards</b>	<b>2001/02-2003/04 Standards</b>
Processor	233 MHz G3 (266 also available)	466 MHz PowerPC G4

Memory	64 MB RAM (32 MB extra memory optional)	256 MB RAM
Video RAM	4 MB	16 MB
Hard Drive ('98) Hard Disk ('01)	4 GB (5.4 also available)	10 GB
Writable ('01)		250MB ZIP as needed
CD-ROM ('98) CD Drive ('01)	24 X	CD-RW (DVD/DC-RW encouraged)
Ethernet	10/100BASE-T	10/100BASE-T (built-in)
Modem	56 KB	
Monitor	15-inch monitor, 800 x 600 resolution, built-in speakers, microphone (17-inch, 1024 x 768 also available)	17-inch, .28 dot pitch (foPC monitor okay, for power conservation, flat panel encouraged)
Keyboard	standard	
Mouse	standard	
Data Backup	Internal ZIP Drive (optional)	
USB ('01)		Bundled, as in FireWire

#### Recommended Minimum *PowerBook* Hardware Standards (Macintosh)

Component	1998/99-2000/01 Standards	2001/02-2003/04 Standards
Processor	250 MHz G3	400 MHz G3 or G4
Memory	32 MB RAM	256 MB RAM
Video RAM		8 MB
Hard Drive ('98) Hard Disk ('01)	5 GB	10 GB
Floppy Drive ('98) Writable ('01)	1.44 MB	250MB ZIP as needed
CD-ROM ('98) CD Drive ('01)	24 x CD-ROM (DVD encouraged – only in 400MHz)	CD-RW (DVD/DC-RW encouraged)
Ethernet	10/100BASE-T	10/100BASE-T (built-in)

Modem	33.6 KB	56 K, V.90
Display	12.1-inch, 800 x 600 resolution	12-inch TFT
USB ('01)		Bundled

### ITS-TII baseline software standards (#6.1)

#### Recommended Software Standards for the Windows and Macintosh Platforms

Minimum standards to guide campuses in the purchase of computer software were recommended in fall 1998 by the Systemwide Internal Partnership. The Information Technology Advisory Committee approved revised standards in fall 2001. It is assumed that software with the capabilities described in the standards will provide useful service for a period of three years.

To qualify as "meeting ITS-TII baseline software standards," software purchased in fiscal years 1998-99 through 2000-2001 must generally meet or exceed the capabilities described in the center column ("1998/99 - 2000/01 Standards"). Computer software purchased in fiscal year 2001-02 must generally meet or exceed the capabilities described in the right-hand column ("2001/02 - 2003/04 Standards").

(Installed on all desktop and notebook personal computers)

#### Operating System Software

Platform	1998/99-2000/01 Standards	2001/02-2003/04 Standards
Intel Desktop (campus-based)	MS Windows NT Workstation 4.0	MS Windows 2000
Intel Desktop (home-based)	MS Windows 95	MS Windows ME
Intel Notebook	MS Windows 95	MS Windows ME
Macintosh OS (Desktop/Notebook)	Mac OS 8.1	Mac OS 9.1

#### Application Software

Application	1998/99-2000/01 Standards	2001/02-2003/04 Standards
Word Processing	MS Word (latest Office)	MS Word (latest Office)
Spreadsheet	MS Excel (latest Office)	MS Excel (latest Office)
Presentation Graphics	MS PowerPoint (latest Office)	MS PowerPoint (latest Office)

Electronic Messaging (email)	MS Outlook/Express/ Web Express (latest) Netscape Messenger (latest)	<i>MS Outlook/Express/ Web Access (latest) Netscape Messenger (latest)</i>
Scheduling Calendaring		<i>Web-based calendaring (works via browser) MS Outlook (Netscape dropping Calendar support in 2000)</i>
World Wide Web Access and Support Discussion Groups	MS Internet Explorer (latest) Netscape Communicator (latest) Acrobat - portable document format (latest) QuickTime – video player (latest) Real Player - streaming video (latest) Other common plug-ins	<i>MS Internet Explorer (latest) Netscape Communicator (latest) Acrobat - portable document format (latest) QuickTime – video/streaming player (latest) Windows Media Player (latest) Other common plug-ins</i>
Virus Detection	Best available deal for a quality product	<i>Best available deal for a quality product</i>
Management Software	Desktop Management Interface (DMI) compliant tools (hardware vendor specific)	<i>Desktop Management Interface (DMI) compliant tools</i>

### **Generally accessible to students (#6.2)**

Include all computer workstations to which students have general access, regardless of organizational ownership; e.g., workstations in university or college/school general purpose computer labs, dual-use classrooms or labs, dormitories or other public spaces. Exclude for purposes of this survey dedicated computer labs intended to support specific instructional, search or research activities; e.g., foreign language or mathematics labs, library information system, etc.

### **classrooms are permanently equipped (#6.2)**

The intent of this item is to track the number of available "smart classrooms;" i.e., those that are equipped with screen/monitor(s), projector, network connections for voice, video and data and a computer workstation or provision for attaching a laptop.

### **Baseline end-user training (#7.0)**

End-user training activities for faculty, staff and students focus on basic computer skills, personal productivity software applications and information systems in common use on the campus.

### **professional development for IT professionals (#7.1)**

Maintenance and operation of the technology infrastructure is dependent on the knowledge and effectiveness of IT professionals. Professional development activities related to baseline technology support services are, therefore, an integral component the technology infrastructure.

**IT courses (#7d(3.2))**

Only completed courses specifically related to the knowledge and skills required of professional IT staff should be included in this survey, whether taken on campus or elsewhere.

**Level 1 Support (#8.1)**

Level 1 support is basic assistance for end users. Technical assistants who provide Level 1 support are normally skilled, but not highly trained employees. Their responsibilities typically include: general user assistance, basic trouble shooting, priority assignment, problem tracking and status reporting. When required, Level 1 assistants refer problems or requests to Level 2 support.

**centrally or non-centrally (#8.1 - 8.3)**

This survey seeks information about the level of support services available to all or most university employees. The question does not solicit data about whether these services are provided centrally by a single IT department, non-centrally by more than one campus division, or a combination of both.

**Level 2 technical support (#8.4)**

Level 2 support typically takes place at local campus help desks, repair depots or other appropriate on-site locations and might be provided through campus IT professional staff or contractors. This support includes workstation trouble shooting and coordination with level-three service providers. (*ITS-TII Status & Directions*, Section IV, p. 9)

**Level 3 technical support (#8.5)**

Level 3 support requires a very high level of expertise as might be provided by professional technicians or personnel from the vendors of the relevant products or technologies. (*ITS-TII Status & Directions*, Section IV, p. 9)

**high speed connection(#9)**

To qualify as "high speed," a workstation must have a switched (not shared), 100 Mbps (or faster) connection to the campus backbone.

**Baseline workstation hardware (#10)**

"Baseline" workstation hardware includes computers and peripherals (printers, external drives, scanners, etc.) provided to faculty, staff and administrators to enable them to perform the work assigned to them. It also includes computers and peripherals made **generally accessible to students**.

**Service level standards/metrics (#10, #11)**

Service level standards/metrics are performance measures defined in formal agreements (e.g., contracts) between a service provider (e.g., campus IT department) and service recipients.

**Baseline workstation software (#11)**

"Baseline" software includes operating system and commonly used personal productivity application software installed on workstations for faculty, staff and administrators and on

computers **generally accessible to students.**

#### **campuswide coordinated process (#12)**

"Coordinated process" means that consultation, decision making and implementation are centrally managed for the entire campus.

#### **campus entitlement (#14.1)**

"Campus entitlement" is a term used in connection with the ITS Technology Infrastructure Initiative (TII). It refers to the number of network (data, voice or video) outlets to which each campus is entitled under systemwide network connectivity standards. For state-support buildings constructed prior to implementation of the TII, the CSU Minimum Baseline Infrastructure Standards apply; all new construction is expected to meet the more generous provisions of the CSU Technology Infrastructure Planning (TIP) Guidelines.

To determine what would be required to bring campus telecommunications infrastructures to at least the common, minimum ("baseline") level in the TII, each campus contracted with an engineering firm to analyze network outlets in existing state-support structures. The preliminary engineering design studies, which began during fiscal year 1999-2000, identified the total number of outlets each campus should have according to the CSU Minimum Baselines Standards. These initial or baseline entitlements are displayed in the table in Part C 3. Funding for renovation to upgrade campus network outlets in existing buildings to meet Minimum Baseline Standards is included in the ITS Technology Infrastructure Initiative, and is provided through high-priority individual campus projects included the CSU Capital Outlay Program.

The number of network outlets to which each campus is entitled increases as new state-support buildings are approved for construction through the normal capital outlay process. Funding for outlets associated with new construction is included in Capital Outlay Program-supported building project budgets.

For purposes of this survey, the total campus network outlet entitlement is, therefore, a combination of: (1) renovation construction to bring outlets in existing buildings up to Minimum Baseline Infrastructure Standards, and (2) new construction that meets the network connectivity provisions of the TIP Guidelines.

#### **approved new building construction (#14.1)**

"Approved" means that the building project has been incorporated into the State's Capital Outlay Budget for the California State University.

#### **current CSU performance standards (#14.2)**

To meet current CSU network performance standards, both the cable infrastructure and the network electronics must be capable of dependably delivering at least 100 Mbps bandwidth. The 100Mbps standard is subject to periodic review and recommendations by the Information Technology Advisory Committee.

#### **components of the baseline technology infrastructure (C1)**

"Baseline" technology infrastructure capabilities and resources include the following components:

#### **Hardware Access**

- General student computer lab equipment
- Student computer leasing program
- Classroom presentation equipment
- Electronic/studio classrooms
- Hardware for academic support staff
- Training labs
- Faculty workstations
- Kiosks
- Video/graphics production equipment

#### **Software Access**

- Software for direct academic support
- Campuswide software library, including maintenance and upgrades
- Interactive training software
- Networking software
- Campuswide Email system
- Basic electronic library and information resources
- Campuswide users' software tools

#### **Network Access**

- Local area networking and Internet connectivity
- Servers (email, web, news, information resources)
- Remote access (modems, dial-in, wireless, special direct lineups)
- Hubs and routers and network electronics for local area networks

#### **Training End-user training (#7)**

- Basic information competency training for students, faculty, staff
- Faculty/staff training in common software and networking tools
- Student training in basic applications required by academic disciplines
- Student training in common software and networking tools
- Student training in uses of generic campuswide applications
- Advanced training for campus trainers and support personnel

#### **Support**

- Campuswide help desk support services
- Training specialists
- Instructional support consultants
- Technicians (equipment, lab, classroom, networking, maintenance)
- Computing lab monitors
- Instructional development specialists
- Curriculum applications development specialists

Source: Integrated Technology Strategy: Baseline Hardware/Software Access, Training and User Support: Final Plan and Guidelines, November 1, 1996.

#### **centralized, decentralized or shared (C1)**

"Centralized" means that decisions are made by a central IT department.

"Decentralized" means that decisions are made by organizational units other than the central IT department (e.g., division, college/school, department).

"Shared" means that local decisions are subject to coordination with, and/or concurrence of the central IT department.

#### **Full-time Faculty, Part-Time Faculty, Staff & Administrators (C2a)**



Campus	FULL-TIME FACULTY		PART-TIME FACULTY	
	Head Count	FTEF	Head Count	FTEF
Bakersfield				
Chico				
Dominguez Hills				
Fresno				
Fullerton				
Hayward				
Humboldt				
Long Beach				
Los Angeles				
Maritime Academy				
Monterey Bay				
Northridge				
Pomona				
Sacramento				
San Bernardino				
San Diego				
San Francisco				
San Jose				
San Luis Obispo				
San Marcos				
Sonoma				
Stanislaus				
Source: Fall 2000 CSU Employees by Campus, Human Resources, Office of the Chancellor				

STAFF & ADMINISTRATORS	
Campus	Full-Time
Bakersfield	
Chico	
Dominguez Hills	
Fresno	
Fullerton	
Hayward	
Humboldt	
Long Beach	
Los Angeles	
Maritime Academy	
Monterey Bay	
Northridge	

Pomona	
Sacramento	
San Bernardino	
San Diego	
San Francisco	
San Jose	
San Luis Obispo	
San Marcos	
Sonoma	
Stanislaus	
Source: Fall 2000 CSU Employees by Campus, Human Resources, Office of the Chancellor	

**Students (C2a)**

STUDENTS		
Campus	Full-Time	Part-Time
Bakersfield		
Chico		
Dominguez Hills		
Fresno		
Fullerton		
Hayward		
Humboldt		
Long Beach		
Los Angeles		
Maritime Academy		
Monterey Bay		
Northridge		
Pomona		
Sacramento		
San Bernardino		
San Diego		
San Francisco		
San Jose		
San Luis Obispo		
San Marcos		
Sonoma		
Stanislaus		
Source:		

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