



Technology Guidelines

Desktop Computers

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PURPOSE

The following establishes general guidelines and a minimum set of expectations to follow when purchasing new desktop personal computers.

SCOPE

This guideline covers the desktop hardware components, base operating software, warranty, support, and service requirements for 2 levels of desktop computer configurations.

APPLICABILITY

This guideline is applicable to desktop computers only and does not cover servers or systems required for support services or applications requiring unique or special configurations.

GUIDELINE

The guidelines outlined in this document define hardware specifications for procuring desktop computers for faculty, students and staff. These guidelines can and should be applied to all functional units/offices in order to provide a standard platform across the college. It is recommended these configurations be used to govern the purchase of all desktop computers.

The guidelines allow colleges to migrate to systems that are current-technology and that can also assist in reducing support costs associated with warranty and deployment. They adopt versions of chipsets and processors that will serve to maximize anticipated hardware life cycles.

Colleges should always follow this document, where possible, when making new desktop purchases since all VCCS system wide desktop product and application decisions will be based solely upon the specifications included in these guidelines. All exceptions should be clearly documented and submitted when requesting purchasing approval.

Thin Clients may function as replacements for more traditional computers in certain situations. There are a variety of possible architectures and manufacturers. However, thin clients should provide the user with the same minimum standards and functionality as the more traditional desktop computers that they are replacing.

MICROSOFT WINDOWS CONFIGURATION BY CATEGORY		
User Level	Entry-Level/Mainstream	Power User
Processor	Core 2 Duo E8500	Quad Core i5-750
Memory	3-4GB DDR3	*4-16 GB DDR3
Chipset	Intel Q45	Intel Q57
Hard Drive	120-320GB SATA	250-320GB SATA
Optical Drive	DVD-RW (optional)	DVD-RW
Graphics	Discrete	PCI Express 512-1GB
Display Size	17-inch viewable	17-inch viewable
Display Type	FPD	FPD
Floppy Drive	No	No
USB Ports	4 rear, 2 front	4 rear, 2 front
NIC	Integrated 10/100/1000	Integrated 10/100/1000
Serial Ports	1 (optional)	1
Parallel Ports	Optional	1
Warranty	Four years	Four years

APPLE MAC CONFIGURATIONS BY CATEGORY		
User Level	Entry-Level/Mainstream	Power User
Processor	Dual Core	Quad Core
Memory	4-8GB	*8-16 GB
Hard Drive	500GB	1TB
Optical Drive	DVD-RW (optional)	DVD-RW
Graphics	ATI Radeon HD 5770 with 1GB of GDDR5 memory, PCI Express 2.0, two Mini Display Port outputs, and one dual-link DVI port	ATI Radeon HD 5770 with 1GB of GDDR5 memory, PCI Express 2.0, two Mini Display Port outputs, and one dual-link DVI port
Display Size	17-inch viewable	17-inch viewable
Display Type	FPD	FPD
USB Ports	3 rear, 2 front	3 rear, 2 front
NIC	Integrated 10/100/1000	Integrated 10/100/1000
*Warranty	Four years	Four years

*Note: memory over 4 GB will require a 64-bit operating system for Windows based systems.

FPD= flat panel display

NIC= network interface card

SATA= Serial Advance Technology Attachment

Entry-Level/Mainstream – primary system for basic application use.

Power User - is the primary system of use needed to power graphic design applications i.e. AutoCAD.

**Warranty – colleges may consider purchasing additional coverage such as Accidental Damage Protection for Microsoft Windows based systems and Apple Care Protection for Mac based systems.

PROCESSOR NAME	CACHE	CLOCK SPEED	FRONT SIDE BUS (MHz)	DUAL-CORE	VT±	Execute Disable Bit	ENHANCED INTEL SPEEDSTEP TECHNOLOGY
Intel Core 2 Duo E8500	6 MB	3.16 GHz	1333 MHz	Yes	Yes	Yes	Yes
Intel Core 2 i5-750	8 MB	2.66GHz	1333 MHz	Yes	Yes	Yes	Yes

NOTE:

- i. The System Office provides contracts for procuring Dell and Hewlett Packard equipment. These contracts were designed so VCCS could maximize its savings on specific models and configurations. The VCCS contract information can be found at the following link:

<http://www.vccs.edu>

- ii. There are four statewide PC contracts established by VITA. In addition to these standard configurations, however, note that many other vendor desktops can be purchased off of these contracts. In the latter case, you will need to refer to the state contract tables titled "Off-Spec Discounts."

<http://www.vita.virginia.gov>

- iii. In the latter part of 2006, Intel introduced dual-core systems to mainstream desktops. Dual-core microprocessors are designed for extreme performance and feature performance-rich technologies.

Intel® Wide Dynamic Execution, enabling delivery of more instructions per clock cycle to improve gaming execution time and energy efficiency

Intel® Deep Power Down Technology, designed to deliver extreme energy-efficient performance

Intel® Smart Memory Access, improving system performance by optimizing the use of all available data bandwidth

Intel® Advanced Smart Cache, providing a higher-performance, more efficient cache subsystem, and optimized for industry leading multi-threaded games

Intel® Advanced Digital Media Boost, accelerating a broad range of applications, including ultra-realistic

game physics and human-like artificial intelligence for an intense gaming experience unlike any other. Now improved even further on 45nm versions with Intel® HD Boost utilizing new SSE4 instructions for even better multimedia performance.

- iv. All the configurations listed in the chart above should be capable of supporting the Windows 7. Colleges should strongly consider 3GB of RAM as the minimal threshold (Entry User level) — the additional memory will offer better performance and increase the potential longevity of the PC.

GUIDELINE-QUALIFIED STATE CONTRACT DESKTOP PCs					
VENDOR	Entry	Mainstream	Power	VCCS	Link: (*)
Dell OptiPlex 790		✓		Contract link	State contract link
*Dell OptiPlex 990			✓	Contract link	State contract link
Dell OptiPlex 390	✓			Contract link	State contract link
HP Compaq dc6200		✓		Contract link	State contract link
HP Compaq dc8200		✓	✓	Contract link	State contract link
HP Compaq dc4000 pro	✓			Contract link	State contract link
Lenovo ThinkCentre M58	✓			n/a	State contract link
NCS Gemini Series	✓			n/a	State contract link

*Note: if vPro is being used for system management, it is only available in the 990 model.

**The Precision series by Dell is recommended for AutoCAD users.

Guideline deviations

(viable if meets specific user need):

Warranty, Support, and Service:

Warranty:

- Minimum four years parts warranty - Minimum four years labor warranty
- Minimum four years Next Business Day parts delivery
- Encloses documentation that fully explains the length, terms and conditions of the warranty and support services.

Support:

- Technical Support, 24-hr, 7-day, Toll-Free
- Internet e-mail and File access
- World Wide Web support/access containing current product information, technical support documents, etc.
- The vendor must supply the following phone numbers and Internet addresses where appropriate:

Technical Support #

E-mail Address

World Wide Web Address

Other (List)

Pease Note:

- Upon request, the vendor must be able to supply reference accounts where 200 or more such systems are installed in a networked environment.
- All replacement components supplied by the vendor must be new and equivalent to those originally installed in the system.
- The vendor must supply all requested documentation to aid in verifying and evaluating the proposed workstation, including, but not limited to, all questions raised in this document.
- Upon request, the vendor must provide a test unit for a 30-day evaluation. Prospective vendor is responsible for all shipping charges.
- The system units must be fully compatible with major manufacturer's network interface cards and network operating systems.

Miscellaneous:

- Energy/Environmental:
- System must be EPA Energy Star compliant.
- System must be FCC class B approved.

Operating System:

- Microsoft Windows 7.
- OS must be installed on the hard disk.
- Must include the OS on DVD-RW, or USB jump drive one per system.

Design/System Considerations:

- Must provide all original hardware documentation and support software on the hard drive, DVD or USB jump drive if available.
 - System must be fully Plug-n-Play ready/compliant.
 - Entire system must be fully compatible with major network operating systems.
 - All computers purchased must be built with comparable components.
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