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| **Title** | **Minimum Workstation Configuration Guidelines for K-12 Public Education** |
| **Category** | **Hardware Architecture** |
| **Date Adopted** | **(Resource Document Only - Approved by the Technical Panel on August 13, 2003)** |
| **Date of Last Revision** | **August 13, 2003** |

## *A. Authority*

Section 86-1506 (6). "(The Nebraska Information Technology Commission shall) adopt minimum technical standards, **guidelines**, and architectures upon recommendation by the technical panel created in Section 86-1511."

## *B. Purpose and Objectives*

The purpose of this document is to recognize the responsibility of the NITC to establish recommended **minimum** configurations for personal computers. Minimum configurations are established in order to simplify technical support and enable a secure desktop environment. Minimum configuration guidelines established by the NITC will (must) change over time in response to requirements of newer applications or operating systems.

These guidelines provide a suggested set of minimum configurations that schools and districts can adopt or modify to meet their specific needs. These guidelines are not intended to endorse or support any single hardware or software vendor. These guidelines are subject to periodic review and revision.

**As minimum configurations, these guidelines are recommendations to be considered in conjunction with other factors, including financial constraints, performance requirements of specific applications, and the networking environment of a school or district.**

The primary objective of these guidelines include recommendations to:

A. Improve versatility and compatibility of desktop systems;
B. Insure that personal computer configurations procured with state funds can operate efficiently in today's high speed connected environment;
C. Provide a guide to schools and districts on when to upgrade existing personal computers;
D. Reduce technical support problems; and,
E. Provide a secure desktop operating system.

As the State of Nebraska begins to develop Internet enabled applications, and e-Government and e-Business applications that are delivered over public and private Intranets and the Internet, it is imperative that schools and districts maintain desktop clients that can efficiently run these new applications. Computers should be able to:

1. Execute network applications that adhere to open standards;
2. Support Internet technologies that adhere to open standards;
3. Extend the desktop communications to the state telecommunications backbone;

4. Support those e-Business and e-Government applications that are appropriate for K-12 environment; and,
5. Provide desktop security, encryption, and virus protection services when connected to the state telecommunications systems.

### *C. Standards and Guidelines*

1. K-12 institutions should endeavor to manage computers as assets. This concept is similar to good management of other physical assets. Technology Plans submitted to the State Department of Education include a planning process for determining, adopting, and periodically upgrading the workstation configurations that meet the school's or district's specific internal needs and any new external requirements. Technology Plans will address options for implementation such as phasing in new purchases, moving older computers to less demanding uses, or surplusing.

2. Existing Personal Computers:

   Schools and Districts should be advised to develop a plan to upgrade or replace existing personal computers if they do not support the following minimum system requirements:

   **Minimum** Hardware Guidelines for Existing Personal Computers
   (1) CPU: 233 MHz (Intel or equivalent CPU, PowerPC, SPARC)
   (2) Memory: 64 MB RAM
   (3) Hard Disk: 2 GB hard disk with a minimum of 650MB of free space
   (4) Operating System:
   (a) Windows 98
   (b) Macintosh OS 9
   (5) LAN Connection:
   (a) Ethernet 10Mb

3. Minimum New Personal Computer Purchasing Guidelines:

   When purchasing new personal computers, schools or districts should consider the following minimum guidelines.

   a. Standard Desktop Hardware
   (1) CPU: 2GHz Intel or equivalent CPU, 800Mhz G4, 550Mhz SPARC, or higher
   (2) Memory: 256 MB RAM
   (3) Disk: 40 GB
   (4) LAN Connection:
   (a) Ethernet: 10/100 Mb
   (5) Operating System:
   (a) Windows 2000 professional or Windows XP
   (b) Mac OS X with Classic environment
   (c) Solaris 8 or 9
   (d) Linux

b. Server Hardware:
   (1) CPU: 2GHz Intel, (or equivalent), 1 GHz G4, or 1GHz UltraSPARC III
   (2) Memory: 512 MB RAM minimum
   (3) Disk: 80GB
   (4) LAN Connection:
      (a) 100/1000Mb
   (5) Operating System:
      (a) Windows 2000 Server or Windows Server 2003
      (b) OS X Server
      (c) Solaris 8 or 9
      (d) Linux

4. Software Recommendations:
   (1) Office Productivity: Current MS Office, AppleWorks 6.2 or Star Office
   (2) Simple Terminal Emulation:
      (a) TELNET3270 or
      (b) TELNET5250
   (3) Advanced 3270/5250 Terminal Emulation with Host Addressable Printing
      (a) IBM Host Client Access Package
   (4) Internet Browser:
      (a) MS Explorer 6 with 128-bit encryption, and XML compliance-or
      (b) Netscape 7.1 with 128-bit encryption, and XML compliance. or
      (c) Safari 1.0 with 128-bit encryption, and XML compliance
   (5) Virus Protection:
      (a) Anti-Virus software
      (b) Anti-Virus subscription service to protect against newest attacks

5. Any school or district that operates a direct connection to the public Internet shall implement security procedures that are consistent with NITC security policies, including firewall services.

6. All schools or districts that receive public Internet e-mail service shall implement security procedures that are consistent with NITC security policies, including the requirement of virus protection on the desktop or mail server.

7. There is far more to the cost of a personal computer than its initial purchase cost. In fact, the purchase cost of the PC usually represents only a small fraction of the total cost of using and supporting the PC over its lifetime. Consulting firms typically calculate PC ownership, depending on the environment, as costing anywhere from $8,000 to $12,000 per year. Costs arise from categories like user wasted time, software, peer support, training and technical support. Industry standards indicate that the ratio of one full-time technical support person is required for every 50 PCs.

### *D. Key Definitions*

1. Schools and Districts shall mean any public education institution providing instruction to students from Kindergarten to Grade 12 and Educational Service Units.

### *E. Applicability*

This document is intended to provide schools and districts with a set of working guidelines that can be referenced when updating technology plans filed with the State of Nebraska, Department of Education.

Schools and Districts should follow these guidelines whenever they intend to support networking services on the desktop. The guidelines may not apply whenever the desktop does not share network services, when there is no connection to state or local networking services, or whenever an application requires a different hardware and software configuration to perform a specific function.