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National Aeronautics and

Space Administration

NASA-STD-2805L
Effective June 24, 2008

MINIMUM HARDWARE CONFIGURATIONS

NASA TECHNICAL STANDARD

FOREWORD

This standard is approved for use by NASA Headquarters and all NASA Centers and is intended to provide a common framework for consistent practices across NASA programs.

The material covered in this standard is governed and approved by the NASA Information Technology Management Board. Its purpose is to define minimum hardware configurations necessary to support interoperability both between NASA end user computers and within the NASA operating environment.   The standard establishes minimum "to keep" and minimum "to buy" hardware configurations. Adherence to this standard ensures compliance with federal requirements for desktop computers, laptops, and other end user devices.

Requests for information, corrections, or additions to this standard should be directed to the John H. Glenn Research Center at Lewis Field (GRC), Emerging Technology and Desktop Standards Group, MS 142-5, Cleveland, OH, 44135 or to *desktop-standards@lists.nasa.gov*. Requests for general information concerning standards should be sent to NASA Technical Standards Program Office, ED41, MSFC, AL, 35812 (telephone 256-544-2448). This and other NASA standards may be viewed and downloaded, free of charge, from the NASA Standards web page: http://standards.nasa.gov/.

(signature on file)

Jonathan Pettus
Chief Information Officer

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1   SCOPE

1.1   Purpose

This Standard defines the current minimum desktop hardware configuration that will be used by NASA to support interoperability. These specifications apply to all NASA desktop and portable systems that are required to support interoperability.

1.2   Scope

Desktop hardware below this minimum configuration may be used in areas where interoperability is not required. However, Agency workstations used for interoperability must meet the criteria specified in section 3.3 of this document.

1.3   Waivers

The waiver process set forth in NPR 2800.1, paragraph 2.2.4, applies to this standard. The desktop standards group, in cooperation with the Chief Technical Officer, will continue to process waivers on behalf of the Principal Center for Workgroup Hardware and Software.

2   ACRONYMS AND DEFINITIONS

2.1   Acronyms

ODIN   The Outsourcing Desktop Initiative for NASA
EPEAT   Electronic Product Environmental Assessment Tool

2.2   Definitions

2.2.1   Desktop Computer

The term desktop computer is used generically to refer to traditional desktop systems as well as laptop computers, notebooks, tablets, engineering workstations, and similar platforms that are utilized to provide basic interoperability.

2.2.2   Minimum Workstation to Support Basic Interoperability

Workstations that support basic interoperability are defined by being networked, and by having users who exchange information electronically, including those users that perform any or all of the activities encompassed in the minimum office automation software suite defined below.

2.2.3   Minimum "To Keep" Workstation Hardware Configuration

The Minimum interoperable workstation hardware configuration that may be retained by a NASA organization.

2.2.4   Minimum "To Buy" Workstation Hardware Configuration

The minimum interoperable workstation hardware configuration that may be procured by a NASA organization. (The CIO at each Center is empowered and accountable for determining the performance/cost assessment for configurations that exceed the minimum hardware configuration and its associated cost. The Center CIO will also ensure that obsolete workstations are excessed on a one-for-one basis as new workstations are introduced.)

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2.2.5 Minimum Interoperability Software Suite

The Minimum Interoperability Software Suite, is defined in NASA-STD-2804L, "*Minimum Interoperability Software Suite*."

3 GENERAL REQUIREMENTS

3.1 Architectural Compliance Requirements

NASA has baselined and approved the NASA Integrated Information Technology Architecture[1]. The architecture is predicated on:

- The selection of standards for a broad and cost-effective infrastructure using commercial off-the-shelf and well-supported open source products to the greatest extent practical
- Interoperability both within and external to NASA
- Flexibility for future growth
- Consistency with generally accepted consensus standards as much as feasible.
- Among these objectives, ensuring interoperability is one of NASA's most critical issues related to information technology.

At times, it is in NASA's best interest to specify commercial products as standards for an interoperable implementation of a particular set of related and integrated functions. The products themselves often include additional functionality or proprietary extensions not specified by this standard. While these products can be used to create higher-level interoperability solutions, these solutions may not be recognized within the context of the NASA interoperability environment and may be deprecated without warning by future revisions to this standard. Users of this standard are advised to apply appropriate caution when implementing proprietary or non-standard extensions, features and functions that go beyond the explicitly stated standard functionality.

3.2 Computing Platforms

This standard recognizes that NASA is a diverse agency with independent computing requirements. NASA will continue to support three desktop computing platforms: Windows, Macintosh, and Linux/UNIX.

3.3 Performance-Based Interoperability

The following table establishes the minimum desktop system hardware configurations that will support the agency-wide interoperability software suite as defined in NASA-STD-2804.

3.3.1 Minimum Hardware Requirements for PC and Macintosh systems

Component	Minimum to keep[2]	Minimum to buy	Comments
processor	32-bit x86, 500MHz or PowerPC G4	32-bit x86, 2GHz	

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[1] NASA-STD-2814A, *NASA Integrated Information Technology Architecture—Technical Framework*
[2] Note that the minimum to keep configuration is required for running Vista.

Component	Minimum to keep[2]	Minimum to buy	Comments
memory	512MB	2GB	
mass storage	10GB	80GB	
display resolution	1024x768	1024x768 flat-panel display	Office 2007 requirement
graphics card	32 bit color	32 bit color, 128MB memory	
interfaces	USB	USB 2.0	
sound	analog stereo output	analog stereo output	
optical drive	CD-ROM	DVD±RW/CD-RW	
network interface	10BASE-T ethernet	100BASE-T ethernet	
removable storage		512MB encrypting flash drive	see 3.3.2 below
smart card reader	yes	yes	see 3.3.3 below
energy saving		EPEAT registered	see 3.3.4 below

3.3.2   Removable Storage

Systems procured after this standard's effective date must include a small USB-based removable storage device of not less than 512MB capacity. This storage device must be capable of storing data in encrypted form.

3.3.3   Smart Card Reader

All systems (not just newly procured ones) must include, by June 30, 2008, a smart card reader that meets the requirements of NIST SP 800-96, and appears on the GSA's FIPS 201 Approved Product List, found at http://fips201ep.cio.gov/apl.php

NASA OCIO will provide SCM Microsystems SCR331 USB-attached readers. These readers, when used with appropriate driver software, meet NASA's requirements. The reader hardware will be made available to the Centers at no additional cost, and should be deployed as the Center infrastructure is available to support smart card use on desktops. In addition, the HSPD12 Desktop Integration Project is validating smart card readers of various interface types for use on NASA Desktops. Additional details about the HSPD12 compliance schedule, supported smart card reader devices on specific platforms will be provided as they become available.   See http://etads.nasa.gov/HDI for current information.

3.3.4   Energy Saving

Newly procured systems must be EPEAT-registered. See http://www.epeat.net for the list of registered systems. All systems currently supplied by ODIN are registered.

Please refer to NASA-STD-2804 for requirements on how energy-saving features should be configured.

3.4   Section 508 Compliance Requirements

Hardware products procured after June 21, 2001 must be in conformance with Section 508 of the Rehabilitation Act. Complete information and guidance on addressing Section 508 requirements is available at:

http://www.section508.nasa.gov

4   REVIEW AND REPORTING REQUIREMENTS

4.1   Interoperability Reporting

Each Center CIO will establish the necessary processes and tools, both manual and automated, to report on an annual basis to the NASA CIO the hardware and software configuration of all workstations at their respective Centers. These data will contain sufficient information to ascertain if the workstation supports NASA employees or is Government-furnished equipment to a contractor, whether the equipment is required to be interoperable, and a description of the hardware architecture/environment. The report will specify the number of NASA employees that do not have access to interoperable workstations.

4.2   Basic Interoperability Standards Maintenance

This standard, and it's companion, NASA-STD-2804 Minimum Interoperability Software Suite, are maintained on behalf of the NASA CIO by the Emerging Technology and Desktop Standards group.   Together, these standards define the software, hardware, and configurations necessary to ensure basic interoperability within the NASA information technology computing infrastructure.

This standard will be reviewed and updated on an as-required basis, not to exceed 12-month intervals.   Participation in the revision process is open to all NASA employees. Details on how to be alerted of changes to the standards and/or comment on proposed updates can be found at:

http://desktop-standards.nasa.gov

This site also maintains interim guidance, position papers, software and hardware reviews, recommendations and other documentation intended to promote standardized basic interoperability.

5   DURATION

5.1   Duration

This standard will remain in effect until canceled or modified by the NASA CIO.

6   SUPPORTING DOCUMENTS

6.1   Supporting Documents

Supporting documents and additional information related to this standard may be found at:

http://desktop-standards.nasa.gov
http://etads.nasa.gov/HDI/HDI_index.shtml
http://pki.nasa.gov/