

# ***Product Standard***

## **General Interworking: Internet Server V2**

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Product Standard

General Interworking: Internet Server V2

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# ***Product Standard***

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## **NAME**

Internet Server V2

## **LABEL FOR LOGO**

Internet Server

## **DESCRIPTION**

This Product Standard defines a set of services in support of Internet and intranet technologies. This includes support of network clients and the presence of a mandatory Java Runtime Environment.

The Internet Server V2 Product Standard provides server-side functionality. The emphasis is towards services and applications support. A standard server will provide a set of core services to support Internet applications.

The mandatory functionality includes:

- The Internet Protocol Suite
- Java Runtime Environment
- Internet capabilities to support network clients

## **CONFORMANCE REQUIREMENTS**

### **Human-Computer Interface**

Not applicable.

### **Portability Interface**

- Java Support

A conforming system provides a set of services that permit the execution of pre-compiled applications that use the Java Runtime Environment (JRE) 1.4.

### **Programming Language Environment**

Not applicable.

**Interoperability**

- TCP/IP Communications Service Interface

A conforming system provides a TCP/IP Communications Service interface, built on Internet Standards.

- Internet Standard 3, Requirements for Internet Hosts:
  - IETF RFC 1122, Requirements for Internet Hosts — Communication Layers [October 1989]
  - IETF RFC 1123, Requirements for Internet Hosts — Application and Support [October 1989]

In addition, TCP shall implement the PUSH flag and the Nagle Algorithm as defined in Internet Standard 3.

- Internet Standard 5, Internet Protocol, Version 4 (IPv4):
  - IETF RFC 791, Internet Protocol [September 1981]
  - IETF RFC 950, Internet Standard Subnetting Procedure [August 1985]
  - IETF RFC 919, Broadcasting Internet Datagrams [October 1984]
  - IETF RFC 922, Broadcasting Internet Datagrams in the Presence of Subnets [October 1984]
  - IETF RFC 792, Internet Control Message Protocol [September 1981]
  - IETF RFC 1112, Host Extensions for IP Multicasting [August 1989]

In addition, all implementations of the Internet Protocol must pass received Type-of-Server (TOS) values up to the transport layer as defined in Internet Standard 3.

- Internet Standard 6, User Datagram Protocol:
  - IETF RFC 768, User Datagram Protocol [August 1980]
- Internet Standard 7, Transmission Control:
  - IETF RFC 793, Transmission Control Protocol [September 1981]
  - IETF RFC 2001, TCP Slow Start, Congestion Avoidance, Fast Retransmit, and Fast Recovery Algorithms [January 1997]

- SNMP Support

A conforming system provides support for the role of an SNMP agent.

- Internet Standard 15, A Simple Network Management Protocol (SNMP):
  - IETF RFC 1157, A Simple Network Management Protocol (SNMP) [May 1990]
- Internet Standard 16, Structure and Identification of Management Information for TCP/IP-based Internets:
  - IETF RFC 1155, Structure and Identification of Management Information for TCP/IP-based Internets [May 1990]
  - IETF RFC 1212, Concise MIB Definitions [March 1991]
- Internet Standard 17, Management Information Base for Network Management of TCP/IP-based Internets:

- IETF RFC 1213, Management Information Base for Network Management of TCP/IP-based Internets: MIB-II [March 1991]

The required MIBs to be provided on a managed system are those described in IETF RFC 1213.

- Hypertext Protocol Transfer Services

A conforming system provides a World Wide Web document server using the HTTP protocol. It supports service of documents over both the HTTP protocol, or HTTP encapsulated within the Secure Sockets Layer Protocol (SSL).

- IETF RFC 1738, Uniform Resource Locators (URL) [December 1994]
- IETF RFC 2068, Hypertext Transfer Protocol — HTTP/1.1 [January 1997]

In addition, a conforming HTTP/1.1 server will:

- Recognize the format of the Request-Line for HTTP/1.0, as defined in:
  - IETF RFC 1945, Hypertext Transfer Protocol — HTTP/1.0 [May 1996] and HTTP/1.1 requests.
- Understand any valid request in the format of HTTP/1.0 or HTTP/1.1
- Respond appropriately with a message in the same major version used by the client
- Secure Sockets Layer (SSL V3.0) Protocol, with support for X.509 certificates

- Internet Domain Name Service

A conforming system provides an Internet domain name server.

- Internet Standard 13, Domain Name System:
  - IETF RFC 1034, Domain Names — Concepts and Facilities [November 1987]
  - IETF RFC 1035, Domain Names — Implementation and Specification [November 1987]
- Support for IETF RFC 2136, Dynamic Updates in the Domain Name System (DNS Update) [April 1997]

- Terminal and File Services

A conforming system provides a telnet (virtual terminal) server, ftp (file transfer) server, and an NFS file server. Optional file services include server support for WebNFS. In addition, a conforming system supports the secure shell protocol.

- Internet Standard 8, Telnet Protocol:
  - IETF RFC 854, Telnet Protocol Specification [May 1983]
  - IETF RFC 855, Telnet Option Specifications [May 1983]
- Internet Standard 9, File Transfer Protocol:
  - IETF RFC 959, File Transfer Protocol [October 1985]with the ftp commands Store Unique (STOU), Abort (ABOR), and Passive (PASV) mandated for reception
- Remote filesystem support over Network File System, as specified in Protocols for Interworking: XNFS, Version 3W.<sup>1</sup>

- Optional client and server support for file service using WebNFS, as specified in Protocols for Interworking: XNFS, Version 3W, Appendix E, WebNFS Extensions:
  - IETF RFC 2054, WebNFS Client Specification [October 1996]
  - IETF RFC 2055, WebNFS Server Specification [October 1996]
- The SSH Protocol Version 2, for secure remote login (ssh, slogin) and other secure network services (scp) over an insecure network, as specified in:
  - SSH Protocol Architecture (draft-ietf-secsh-architecture-14.txt)
  - SSH Transport Layer Protocol (draft-ietf-secsh-transport-16.txt)
  - SSH Authentication Protocol (draft-ietf-secsh-userauth-17.txt)
  - SSH Connection Protocol (draft-ietf-secsh-connect-16.txt)
- Mail Services
 

A conforming system provides Electronic Mail services. It will be able to act as an SMTP server relay and be able to receive incoming messages. It will be able to act as a post office supporting the POP3 protocol and IMAP4.

  - Internet Standard 53, Post Office Protocol Version 3:
    - IETF RFC 1939, Post Office Protocol — Version 3 [May 1996]
  - Internet Standard 10, Simple Mail Transfer Protocol:
    - IETF RFC 821, Simple Mail Transfer Protocol [August 1982]
    - IETF RFC 1869, SMTP Service Extensions [November 1995]
  - Internet Standard 10, Simple Mail Transfer Protocol:
    - IETF RFC 1870, SMTP Service Extension for Message Size Declaration [November 1995]
  - Internet Standard 11, Format of Electronic Mail Messages:
    - IETF RFC 822, Standard for the Format of ARPA Internet Text Messages [August 1982]
  - Support for processing transmitted messages conforming to Internet Standard 11, Format of Electronic Mail Messages:
    - IETF RFC 1049, Content Type Header Field for Internet Messages [March 1988]
    - IETF RFC 2554, SMTP Service Extensions for Authentication [March 1999]
  - Support for IETF RFC 2060, Internet Message Access Protocol — Version 4rev1 [December 1996]

A conforming system may support:

  - IETF RFC 2487, SMTP Service Extensions for Secure SMTP over TLS [January 1999]

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1. Technical Standard, February 1998, Protocols for Interworking: XNFS, Version 3W (ISBN: 1-85912-184-5, C702), published by The Open Group.

- Print Services

A conforming system provides remote printing support, either by support for remote printing support based on:

- IETF RFC 1179, Line Printer Daemon Protocol [August 1990]

A conforming system will document any differences from IETF RFC 1179.

or the Internet Printing Protocol, as specified in:

- IETF RFC 2911, Internet Printing Protocol/1.1: Model and Semantics [September 2000]
- IETF RFC 2910, Internet Printing Protocol/1.1: Encoding and Transport [September 2000]
- IETF RFC 2569, Mapping between LPD and IPP Protocols [April 1999]

- Client Booting Services

A conforming system provides client booting services using the bootp, tftp, and dhcp protocols.

- IETF RFC 2131, Dynamic Host Configuration Protocol [March 1997]
- IETF RFC 951, Bootstrap Protocol (BOOTP) [September 1985]
- Internet Standard 33, The TFTP Protocol (Revision 2):
  - IETF RFC 1350, The Trivial File Transfer Protocol (TFTP) (Revision 2) [July 1992]

- Time Services

A conforming system provides Network Time Service (NTP).

- Internet Standard 12, Network Time Protocol (Version 2) Specification and Implementation:
  - IETF RFC 1119, Network Time Protocol (Version 2) Specification and Implementation [September 1989]

- Directory Service

A conforming system provides LDAP server-side directory services as specified in LDAP Features for Certification.<sup>2</sup> The features are drawn from the following RFCs:

- IETF RFC 2251, Lightweight Directory Access Protocol (v3) [December 1997]
- IETF RFC 2252, Lightweight Directory Access Protocol (v3): Attribute Syntax Definitions [December 1997]
- IETF RFC 2253, Lightweight Directory Access Protocol (v3): UTF-8 String Representation of Distinguished Names [December 1997]
- IETF RFC 2254, The String Representation of LDAP Search Filters [December 1997]
- IETF RFC 2255, The LDAP URL Format [December 1997]
- IETF RFC 2256, A Summary of the X.500(96) User Schema for use with LDAPv3 [December 1997]

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2. LDAP Documentation, February 2003, LDAP Features for Certification (I031), published by The Open Group.

#### **OPERATIONAL ENVIRONMENT**

None.

#### **PORTABILITY ENVIRONMENT**

None.

#### **OVERRIDING STANDARDS**

All formal standards included within this Product Standard are specified by a direct reference to the formal standard document itself.

#### **INDICATORS OF COMPLIANCE**

For the Network File System, the Indicator of Compliance is a Test Report from a currently authorized release of the VSX+XNFS Test Suite.

For the Directory Services, the Indicator of Compliance is an LDAP Certified certificate.

For the other constituent parts of this Product Standard there will be no initial Indicator of Compliance specified. If tests are introduced, then such tests will become a mandatory Indicator of Compliance three months after formal approval for branding. Reference should be made to *Test Suites and Test Laboratories* to ascertain whether test suites are now available, and whether the three-month period has elapsed.

#### **MIGRATION**

This is a minor update to the Internet Server Product Standard. No migration issues are anticipated.