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A Catalog of Available X.500 Implementations

Status of this Memo

This memo provides information for the Internet community. It does not specify an Internet standard. Distribution of this memo is unlimited.

Abstract

The goal of this document is to provide information regarding the availability and capability of implementations of X.500. Comments and critiques of this document, and new or updated descriptions of X.500 implementations are welcome. Send them to the Directory Information Services Infrastructure (DISI) Working Group (disi@merit.edu) or to the editors.

1. Introduction

This document catalogs currently available implementations of X.500, including commercial products and openly available offerings. It contains descriptions of Directory System Agents (DSA), Directory User Agents (DUA), and DUA client applications. The latter can include such applications as browsers, DSA management tools, or lightweight DUAs that employ an application-level protocol to communicate with a DUA (which then in turn communicates with a DSA) to support user service. Section 2 of this document contains a listing of implementations cross referenced by keyword. This list will aid in identifying particular implementations that meet your criteria.

To compile this catalog, the DISI Working Group solicited input from the X.500 community by surveying several Internet mailing lists, including: iso@nic.ddn.mil, isode@nic.ddn.mil, osi-ds@cs.ucl.ac.uk, and disi@merit.edu.

Readers are encouraged to submit comments regarding both the form and content of this memo. New submissions are always welcome. Please direct input to the parties as described in the Status of this Memo section. DISI will produce new versions of this document when a sufficient number of changes have been received. This will be determined subjectively by the DISI chairperson.

1.1 Purpose

The growth of existing X.500 pilot activities (e.g., White Pages Pilot Project) and the advent of new pilots (e.g., ARRNet Directory Services Project, NIST/GSA Pilot Project) are signals that X.500 is a viable directory service mechanism for the Internet community. A goal of DISI is to enable the continued growth of X.500 by lowering the lack-of-information barrier. This document takes one step toward that goal by providing an easily accessible source of information on X.500 implementations.

1.2 Scope

This document contains descriptions of either commercially or freely available X.500 implementations. It does not provide instructions on how to install, run, or manage these implementations. Because the needs and computing environments of each organization differ vastly, no recommendations are given. The descriptions and indices are provided to make the readers aware of existing options and to enable more informed choices.

1.3 Disclaimer

Implementation descriptions were written by implementors and vendors, and not by the members of DISI. Although DISI has worked with the description authors to ensure readability, no guarantees can be made regarding the validity of descriptions or the value of said implementations. Caveat emptor.

1.4 Overview

Section 1 contains introductory information.

Section 2 contains a list of keywords, their definitions, and a cross reference of the X.500 implementations by these keywords.

Section 3 contains the X.500 implementation descriptions.

Section 4 lists the editors' addresses.

1.5 Acknowledgments

The creation of this catalog would not have been possible without the efforts of the description authors and the members of the DISI Working Group. The editors thank you for your hard work and constructive feedback. A special thanks is also extended to the members of the NOCTools Working Group. The "Network Management Tool Catalog" (RFC-1147) served as a valuable example. Bob Stine and Bob Enger made key suggestions that enabled us to learn from their experiences.

The efforts of the editors were sponsored by Defense Advanced Research Projects Agency Contract Number DACA76-89-D-0002 (Field Operational X.500 Project), and U. S. Department of Energy Contract Number DE-AC03-76SF00098.

2. Keywords

Keywords are abbreviated attributes of the X.500 implementations. The list of keywords defined below was derived from the implementation descriptions themselves. Implementations were indexed by a keyword either as a result of: 1) explicit, not implied, reference to a particular capability in the implementation description text, or 2) input from the implementation description author(s).

2.1 Keyword Definitions

This section contains keyword definitions. They have been organized and grouped by functional category. The definitions are ordered first alphabetically by keyword category, and second alphabetically by implementation name within keyword category.

2.1.1 Availability

Available via FTAM
: Implementation is available using FTAM.

Available via FTP
: Implementation is available using FTP.

Commercially Available
: This implementation can be purchased.

Free
: Available at no charge, although other restrictions may apply.

Potentially Unavailable
: Implementation was not available at the time this document was written.

Source
: Source code is available, potentially at an additional cost.

2.1.2 Implementation Type

API
: Implementation comes with an application programmer's interface (i.e., a set of libraries and include files).

DSA Only
: Implementation consists of a DSA only. No DUA is included.

DSA/DUA
: Both a DSA and DUA are included in this implementation.

DUA Light Weight Client
: Implementation is a DUA-like program that uses a non-OSI protocol to satisfy X.500 requests.

DUA Only
: Implementation consists of a DUA only. No DSA is included.

2.1.3 Internetworking Environment

CLNP
: Implementation uses OSI CLNP.

OSI Transport
: Implementation description specifies that OSI transport protocols are used but does not specify which one(s).

RFC-1006
: Implementation uses RFC-1006 with TCP/IP transport service.

X.25
: Implementation uses OSI X.25.

2.1.4 Pilot Connectivity

DUA Connectivity
: The DUA can be connected to the pilot, and information on any pilot entry looked up. The DUA is able to display standard attributes and object classes and those defined in the COSINE and Internet Schema.

DSA Connectivity
: The DSA is connected to the DIT, and information in this DSA is accessible from any pilot DUA.

2.1.5 Miscellaneous

Included in ISODE
: DUAs that are part of ISODE.

Limited Functionality
: Survey states that the implementation has some shortcomings or intended lack of functionality, e.g., omissions were part of the design to provide an easy-to-use user interface.

Needs ISODE
: ISODE is required to compile and/or use this implementation.

X Window System
: Implementation uses the X Window System to provide its user interface.

2.1.5 Operating Environment

3Com
: Implementation runs on a 3Com platform.

Apollo
: Implementation runs on an Apollo platform.

Bull
: Implementation runs on a Bull platform.

Cray
: Implementation runs on a Cray.

DEC Ultrix
: Implementation runs under DEC Ultrix.

HP
: Implementation runs on an HP platform.

IBM (Non-PC and RISC)
: Implementation runs on some type of IBM, which is not a PC or UNIX workstation.

IBM PC
: Implementation runs on a PC.

IBM RISC
: Implementation runs on IBM's RISC UNIX workstation.

MIPS
: Implementation runs on a MIPS RISC UNIX workstation.

Macintosh
: Implementation runs on a Macintosh.

Multiple Vendor Platforms
: Implementation runs on more than one hardware platform.

Philips
: Implementation runs on a Philips platform.

Siemens
: Implementation runs on a Siemens platform.

Sun
: Implementation runs on a Sun platform.

UNIX
: Implementation runs on a generic UNIX platform.

Unisys
: Implementation runs on a Unisys platform.

VMS
: Implementation runs under VAX/VMS.

2.2 Implementations Indexed by Keyword

This section contains an index of implementations by keyword. You can use this list to identify particular implementations that meet your chosen criteria.

The index is organized as follows: keywords appear in alphabetical order; implementations characterized by that keyword are listed alphabetically as well. Note that a "*" is used to indicate that the particular implementation, or feature of the implementation, may not be available at this time.

For formatting purposes, we have used the following abbreviations for implementation names: UWisc (University of Wisconsin), HP X.500 DDS (HP X.500 Distributed Directory Software), IS X.500 DSA/DSAM, DUA(Interactive Systems' X.500 DSA/DSAM, DUA).

3Com

X.500 DUA process

API

Alliance OSI X.500
Custos
DCE/GDS
DS-520, DS-521
HP X.500 DDS
IS X.500 DSA/DSAM, DUA
Mac-ISODE
OSI Access and Directory
OSI-DSA
OSI-DUA
QUIPU
UCOM X.500
VMS-ISODE
VTT X.500
WIN/DS

Apollo

VTT X.500

Available via FTAM

DE
DISH-VMS 2.0
POD
QUIPU
XLU

Available via FTP

DE
DISH-VMS 2.0
DIXIE
Mac-ISODE
maX.500
POD
psiwp
QUIPU
ud
VMS-ISODE
Xdi
XLU

Bull

UCOM X.500

CLNP

Cray OSI Version 2.0
DCE/GDS
HP X.500 DDS
OSI Access and Directory
OSI-DSA
OSI-DUA
QUIPU
VTT X.500
WIN/DS
X.500 DUA process
Xdi
XT-DUA

Commercially Available

- Alliance OSI X.500
- Cray OSI Version 2.0
- DCE/GDS
- Directory 500
- DS-520, DS-521
- HP X.500 DDS
- IS X.500 DSA/DSAM, DUA
- OSI Access and Directory
- OSI-DSA
- OSI-DUA
- UCOM X.500
- VTT X.500
- WIN/DS
- X.500 DUA process
- XT-DUA
- xwp [PSI]

Cray

- Cray OSI Version 2.0

DEC Ultrix

- DCE/GDS
- QUIPU
- UCOM X.500
- *xwp [UWisc]

DSA Only

- OSI-DSA

DSA Connectivity

- DS-520
- OSI Access and Directory

DSA/DUA

- Alliance OSI X.500
- Cray OSI Version 2.0
- Custos
- Directory 500
- DS-520, DS-521
- HP X.500 DDS
- IS X.500 DSA/DSAM, DUA
- Mac-ISODE
- OSI Access and Directory
- QUIPU
- UCOM X.500
- VMS-ISODE
- VTT X.500
- WIN/DS

DUA Connectivity

- DE
- DS-521
- OSI Access and Directory
- Xdi

DUA Light Weight Client

- *MacDish
- DIXIE
- maX.500
- psiwp
- ud

DUA Only

- DE
- DISH-VMS 2.0
- OSI-DUA
- POD
- psiwp
- SD
- X.500 DUA process
- Xds
- xdua
- XLU
- XT-DUA
- xwp [PSI]

Free

- xwp [UWisc]
- Custos
- DE
- DISH-VMS 2.0
- DIXIE
- Mac-ISODE
- maX.500
- POD
- psiwp
- QUIPU
- SD
- ud
- VMS-ISODE
- Xdi
- Xds
- xdua
- XLU

HP

- Alliance OSI X.500
- HP X.500 DDS
- QUIPU
- UCOM X.500

IBM (Non-PC and RISC)

- Alliance OSI X.500

IBM PC

- Alliance OSI X.500
- *UCOM X.500
- *VTT X.500
- xwp [UWisc]

IBM RISC

- DCE/GDS
- UCOM X.500

Included In ISODE

- POD
- SD

Limited Functionality

- Custos
- *MacDish
- POD
- psiwp
- Xds
- xwp [PSI]

MIPS

- Alliance OSI X.500
- OSI Access and Directory
- QUIPU

Macintosh

- Alliance OSI X.500
- DIXIE
- Mac-ISODE
- *MacDish
- maX.500
- psiwp
- QUIPU
- *UCOM X.500

Multiple Vendor Platforms

- Alliance OSI X.500
- Custos
- DCE/GDS
- DS-520, DS-521
- IS X.500 DSA/DSAM, DUA
- POD
- QUIPU
- SD
- UCOM X.500
- ud
- VTT X.500
- WIN/DS
- X.500 DUA process
- xdua
- XLU
- XT-DUA
- xwp [PSI]
- xwp [UWisc]

Needs ISODE

- Custos
- DE
- DISH-VMS 2.0
- DIXIE
- Mac-ISODE
- *MacDish
- POD
- psiwp
- SD
- VMS-ISODE
- Xdi
- Xds
- xdua
- XLU
- XT-DUA
- xwp [UWisc]

OSI Transport

- Alliance OSI X.500
- Cray OSI Version 2.0
- Custos
- DS-520, DS-521
- IS X.500 DSA/DSAM, DUA
- QUIPU
- WIN/DS
- XT-DUA

Philips

- UCOM X.500

Potentially Unavailable

- MacDish

RFC-1006

- Alliance OSI X.500
- Cray OSI Version 2.0
- Custos
- DCE/GDS
- Directory 500
- DISH-VMS 2.0
- DS-520, DS-521
- IS X.500 DSA/DSAM, DUA
- Mac-ISODE
- OSI Access and Directory
- *OSI-DSA
- *OSI-DUA
- POD
- QUIPU
- SD
- UCOM X.500
- VMS-ISODE
- VTT X.500
- WIN/DS
- Xdi
- Xds
- XLU
- XT-DUA

Siemens

- *UCOM X.500

Source

- DCE/GDS
- DE
- DS-520, DS-521
- Mac-ISODE
- OSI-DSA
- OSI-DUA
- POD
- psiwp
- QUIPU
- ud
- VMS-ISODE
- WIN/DS
- Xdi
- Xds
- xdua
- XLU

Sun

- Alliance OSI X.500
- Custos
- Directory 500
- DIXIE
- QUIPU
- UCOM X.500
- ud
- VTT X.500
- Xds
- xdua
- XT-DUA

UNIX

- Custos
- DE
- DIXIE
- DS-520, DS-521
- IS X.500 DSA/DSAM, DUA
- POD
- QUIPU
- SD
- UCOM X.500
- ud
- WIN/DS
- Xdi
- XLU
- XT-DUA
- xwp [PSI]
- xwp [UWisc]

Unisys

- OSI-DSA
- OSI-DUA

VMS

- DISH-VMS 2.0
- VMS-ISODE

X Window System

- QUIPU
- SD
- WIN/DS
- X.500 DUA process
- Xdi
- Xds
- xdua
- XT-DUA
- xwp [PSI]
- xwp [UWisc]

X.25

DCE/GDS
Directory 500
DISH-VMS 2.0
HP X.500 DDS
OSI Access and Directory
OSI-DSA
OSI-DUA
QUIPU
*UCOM X.500
VTT X.500
WIN/DS
X.500 DUA process
Xdi
XT-DUA

3. Implementation Descriptions

In the following pages you will find descriptions of X.500 implementations listed in alphabetical order. In the case of name collisions, the name of the responsible organization, in square brackets, has been used to distinguish the implementations. Note that throughout this section, the page header reflects the name of the implementation, not the date of the document. The descriptions follow a common format, as described below:

NAME
: The name of the X.500 implementation and the name of the responsible organization. Implementations with a registered trademark indicate this by appending "(tm)", e.g., GeeWhiz(tm).

LAST MODIFIED
: The month and year within which this implementation description was last modified.

KEYWORDS
: A list of the keywords defined in Section 2 that have been used to cross reference this implementation.

ABSTRACT
: A brief description of the application. This section may optionally contain a list of the pilot projects in which the application is being used.

COMPLETENESS
: A statement of compliance with respect to the 1988 CCITT Recommendations X.500-X.521 [CCITT-88], specifically Section 9 of X.519, or the 1988 NIST OIW Stable Implementation Agreements [NIST-88].

INTEROPERABILITY
: A list of other DUAs and DSAs with which this implementation can interoperate.

PILOT CONNECTIVITY
: Describes the level of connectivity it can offer to the pilot directory service operational on the Internet in North America, and to pilots co-ordinated by the PARADISE project in Europe. Levels of connectivity are: Not Tested, None, DUA Connectivity, and DSA Connectivity.

BUGS
: A warning on known problems and/or instructions on how to report bugs.

CAVEATS AND GENERAL LIMITATIONS
A warning about possible side effects or shortcomings, e.g., a feature that works on one platform but not another.

INTERNETWORKING ENVIRONMENT
A list of environments in which this implementation can be used, e.g., RFC-1006 with TCP/IP, TP0 or TP4 with X.25.

HARDWARE PLATFORMS
A list of hardware platforms on which this application runs, any additional boards or processors required, and any special suggested or required configuration options.

SOFTWARE PLATFORMS
A list of operating systems, window systems, databases, or unbundled software packages required to run this application.

AVAILABILITY
A statement regarding the availability of the software (free or commercially available), a description of how to obtain the software, and (optionally) a statement regarding distribution conditions and restrictions.

NAME

Alliance OSI(tm) X.500
Touch Communications Inc.

LAST MODIFIED

July, 1991

KEYWORDS

API, Commercially Available, DSA/DUA, HP, IBM (Non-PC and RISC), MIPS, Macintosh, Multiple Vendor Platforms, OSI Transport, RFC-1006, Sun

ABSTRACT

Alliance OSI includes XDS (API), DUA, DSA and DIB all as separate components.

Touch's X.500 products have been designed for complete portability to any operating system or hardware environment. The protocols include DAP and DSP of the OSI X.500 specification along with the required XDS, DUA, DSA and DIB components. In addition to X.500, Touch supplies other OSI protocol layers including: ROSE, ACSE, Presentation, Session and any of the OSI lower layers (Transport, Network along with RFC-1006). Touch also supplies other application layer protocols such as X.400, FTAM, CMIP (and general network management), etc.

The Alliance OSI X.500 is compliant with the CCITT X.500 1988 Recommendations. The ROSE/ACSE/Presentation/Session stack can be optionally provided by Touch.

The DUA may represent a single user, or may represent a group of users. It may be attached to a given DSA within the same system but is also capable of invoking operations in Touch's or any other vendor's compliant DSA on a remote system. The binding operation requires the user to give a distinguished name and password in order for the Directory to identify the user. Once an association is established the user may invoke the following operations: READ, COMPARE, ABANDON, LIST, SEARCH, ADD_ENTRY, REMOVE_ENTRY, MODIFY_ENTRY, MODIFY_RDN.

Due to the fact that access to the physical disk is in most cases a blocking operation (synchronous) Touch has separated the database processing (I/O process) from the DSA protocol entity. This separation allows the DSA entity to continue processing during the frequent database accesses from the DSA. The DSA supports all the Directory operations as specified in the CCITT X.500 specification. Chaining, Referral and Multicasting are provided and supported in the Alliance OSI DSA. The DSA supports all the service control options included in the operation command arguments. Filtering conditions are supported via the FILTER in the SEARCH operation.

The Alliance OSI X.500 product supports all the NIST defined mandatory X.500 and X.400 object classes and attributes.

Alliance OSI X.500 supports all the mandatory Directory attribute types (and their associated abstract syntaxes) in the NIST Directory implementation profile. Touch has extended the Directory and allows users to define private attributes. This means that a user can utilize the Alliance OSI Directory for a general purpose, user defined database activity.

Touch provides a full set of administration and Directory management facilities.

Touch is in the process of integrating the X.500 product with the Worldtalk 400 product. Worldtalk 400 is Touch's end user X.400 message switch, providing gateways between proprietary mail systems (SMTP, Microsoft Mail, MHS, cc:mail, etc.) and X.400. X.500 is a key component for a messaging network.

COMPLETENESS

Strong Authentication is not supported however Simple Authentication is supported.

INTEROPERABILITY

No interoperability testing has been completed as of yet.

PILOT CONNECTIVITY

Numerous OEMs are using the Alliance OSI X.500 product in product development as well as in pilot networks.

BUGS

N/A

CAVEATS AND GENERAL LIMITATIONS

Currently the Alliance OSI X.500 DIB has only been validated within a UNIX File System. The protocol components are portable as is the interface between the DSA and the DIB.

INTERNETWORKING ENVIRONMENT

Alliance OSI X.500 can be utilized over TCP/IP and/or OSI Transport on LANs and WANs. Currently X.500 has only been verified over OSI, however other Alliance OSI application layers have been configured over a RFC-1006 which is available as part of the Alliance OSI product line.

HARDWARE PLATFORMS

Alliance OSI has been ported to numerous platforms ranging from IBM Mainframes MVS to Apple Macintosh. For UNIX environments Touch has portations for 386 AT/Bus, SUN-3 and 4, Mips, and HP.

SOFTWARE PLATFORMS

As stated above, the Alliance OSI product have been ported to numerous systems. In the UNIX environment the X.500 product exists on SUN OS 4.0 and greater, Mips RISC OS, Interactive 386 and HP-UX.

AVAILABILITY

Alliance OSI is commercially available from:

Touch Communications Inc.
250 E. Hacienda Ave
Campbell, CA 95008
Sales and Information: (408) 374-2500
FAX: (408) 374-1680

NAME

Cray OSI Version 2.0
Cray Research Inc.

LAST MODIFIED

July, 1991

KEYWORDS

CLNP, Commercially Available, Cray, DSA/DUA, OSI Transport, RFC-1006

ABSTRACT

The product is packaged with the Cray OSI product. It includes a DSA and DUA capable of OSI or TCP/IP connections. The implementation is based on the ISODE QUIPU product.

COMPLETENESS

Compliance with CCITT88 plus access control extensions. Strong authentication not yet implemented.

INTEROPERABILITY

Interoperates with ISODE QUIPU based implementations.

PILOT CONNECTIVITY

The software has been operated in conjunction with the White Pages Pilot Project.

BUGS

[No information provided--Ed.]

CAVEATS AND GENERAL LIMITATIONS

See ISODE QUIPU limitations.

INTERNETWORKING ENVIRONMENT

TCP/IP, TP4

HARDWARE PLATFORMS

Runs on UNICOS based Cray machines with OS level 7.0 or greater.

SOFTWARE PLATFORMS

Supported for CRAY UNICOS 7.0 or greater.

AVAILABILITY

Commercially available via Cray Research Inc. Sales Representatives.

NAME

Custos
National Institute of Standards and Technology

LAST MODIFIED

November, 1991

KEYWORDS

API, DSA/DUA, Free, Limited Functionality, Multiple Vendor Platforms, Requires ISODE, OSI Transport, RFC-1006, Sun, UNIX

ABSTRACT

The implementation consists of a set DUA library routines, a terminal interface, and a DSA. The implementation was developed in C on Sun 3 workstations under the UNIX operating system. All underlying services are provided by the ISODE development package. The development package is also used for encoding and decoding ASN.1 data as well as for other data manipulation services. Using the ISODE package the implementation can be run over both OSI and TCP/IP protocols.

The DSA provides full support for both DAP and DSP protocols, conformant with ISO 9594/CCITT X.500 standards. The DIB is maintained using a locally developed relational database system. The interface to the database system consists of a set of SQL-like C functions. These are designed to allow straightforward replacement of the local database system with a more powerful commercial system. To achieve better performance several options are supported that permit loading of selected portions of the database into core. When these options are selected data can be retrieved more quickly from in-core tables; all modifications to the DIB are directly reflected in the in-core tables and the database.

COMPLETENESS

To date the Read, Compare, List, Add Entry, and Remove Entry operations have been implemented and are supported over both DAP and DSP; aliasing and replication are also supported. The version under current development (available January ’92) includes simple authentication, access control, and the Search operation. The modify operations and Abandon are not supported and there is no support for schema checking.

INTEROPERABILITY

Have successfully interoperated with QUIPU and OSIWARE over the DAP. No DSP interoperability testing has been done.

PILOT CONNECTIVITY

Not tested.

BUGS

Some testing in the near term future will be done to try to identify these, but presently it's not possible to give an accurate list of bugs.

CAVEATS AND GENERAL LIMITATIONS

No limitations on file sizes, etc. The only side effects to creating large files should be in the area of performance. Specifically, optimization requires loading parts of the DIB in core so greater memory requirements will be necessary for achieving better performance with a large database. Any platform the implementation can be ported to (generally any platform ISODE can be ported to) should support all features.

INTERNETWORKING ENVIRONMENT

RFC-1006; TP4/CLNP (SunLink OSI) over 802 and X.25 (SunLink X.25).

HARDWARE PLATFORMS

It has been run on Sun-3, but there are no known reasons why it should not run on any hardware running the ISODE software.

SOFTWARE PLATFORMS

It requires UNIX and the ISODE software package. It's been developed and tested with ISODE version 6.0 and Sun OS version 4.1.1. Uses a locally developed relational DBMS that should be easily replaceable with commercially available relational systems.

AVAILABILITY

While under continuing development, availability of the implementation is limited to organizations making appropriate arrangements with NIST. The implementation will be publicly available when development is completed.

NAME

DCE/GDS (tm)
Open Software Foundation, Inc.

LAST MODIFIED

July, 1991

KEYWORDS

API, CLNP, Commercially Available, DEC Ultrix, DSA/DUA, IBM RISC, Multiple Vendor Platforms, RFC-1006, Source, X.25

ABSTRACT

DCE/GDS (Distributed Computing Environment/Global Directory Service) was based on the original Siemens DIR.X product. It supports full DUA and DSA functions for globally unique identifications and for location of objects in the network. It also provides functions to answer queries (both yellow-page and white-page) about objects and attribute information. The software implements full DAP and DSP protocols specified in X.519. An ASN.1 compiler and required ACSE, ROSE, presentation, session and RFC-1006 protocols implementations are also included.

The product has been successfully participated in X.500 Cebit Interoperability tests at 1990 and 1991 Hanover Fairs. It also interoperates with the ISODE QUIPU X.500 implementation.

COMPLETENESS

Compliant with EWOS Agreements which is being harmonized with OIW Agreements.

Strong authentication in X.509 is not yet implemented. (Password scheme is currently used.)

Consists of both DUA and DSA implementation according to the 88 CCITT X.500 and ISO 9594 standard. The X/Open standard XDS (version 1.0) and XOM (version 2.0) interface libraries are also provided. XDS and XOM interfaces are also used to access DCE/CDS (Local Cell Directory Service) transparently. A GDA (Global Directory Agent) serves as the gateway between the DCE CDS and GDS.

INTEROPERABILITY

This implementation of DAP and DSP can interoperate with other X.500 implementations from other Cebit demo participants including IBM, HP, ICL, Bull, Nixdorf, etc. It also interoperates with ISODE QUIPU.

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

Problems and bug report email address: dce-defect@osf.org.

CAVEATS AND GENERAL LIMITATIONS

The software is highly portable without general limitations.

INTERNETWORKING ENVIRONMENT

OSI TP4 with CLNP
OSI TP0, 2 & 4 with X.25
RFC-1006 with TCP/IP

HARDWARE PLATFORMS

DCE/GDS runs on SNI’s hardware platforms and is being ported to run on IBM RS6000, Digital DECstation, etc.

SOFTWARE PLATFORMS

SINIX (UNIX System V Release 4)
Currently being ported: OSF/1.1, AIX 3.1, Ultrix, etc.
DCE/GDS can use either BSD sockets or XTI/TLI to access the transports.

AVAILABILITY

The source code license of DCE/GDS is commercially available from:

Open Software Foundation, Inc.
11 Cambridge Center
Cambridge, MA 02142

Please contact:

Jon Gossels
Tel: 617-621-8763
Fax: 617-621-0631
e-mail: gossels@osf.org

NAME

DE
COSINE PARADISE

LAST MODIFIED

November, 1991

KEYWORDS

Available via FTAM, Available via FTP, DUA Connectivity, DUA Only, Free, Included in ISODE, Limited Functionality, Needs ISODE, Source, UNIX

ABSTRACT

DE (Directory Enquiries) is intended to be a simple-to-use interface, suitable for the naive user, and suitable for running as a public access dua to provide lowest common denominator access to the Directory. It is a scrolling interface and will thus run on dumb terminals, even teletypes! The user is asked to fill in up to 4 questions per query: person's name; department; organization; country. The prompts are very verbose -- the intention is that the user should not be able get stuck, and information on how to get into the help system should always be on the screen. The help screens (of which there are 15) are aimed at the non-technical user. Whilst the outwards appearance of the interface is simple, a lot of attention has being given to mapping the strings the user enters onto X.500 operations in such a way that the interface seems to do the "right thing". An important characteristic is the way the interface tries a series of searches, gradually relaxing the matching criteria from exact (in some sense), to good, through to "fuzzy". A considerable amount of configuration is possible to present the results in locally acceptable formats.

DE was funded by the COSINE PARADISE project, and DE is used as the PARADISE public access dua. You can test the software by telnet to 128.86.8.56 and logging in as dua -- no password required.

COMPLETENESS

The interface is a querying engine only.

INTEROPERABILITY

DE is built with the ISODE software (release 7.0). Its interoperability relies on the correctness of the Quipu libraries.

PILOT CONNECTIVITY

The interface is in use as the COSINE Central DUA Service, and is used by a number of UK institutions as a public access dua (usually over X.29). It is able to query entries in pilots throughout the world. It is not able to query for entries which are in organizations beneath locality entries under country entries. It is not possible to query for people who do not work for organizations. The interface only searches for entries of the following type: organizations, organizational units, people, roles, and rooms.

BUGS

Send bug reports to:

p.barker@cs.ucl.ac.uk
helpdesk@paradise.ulcc.ac.uk

CAVEATS AND GENERAL LIMITATIONS

DE tries to cater well for the general case, at the expense of not dealing with the less typical. The main manifestation of this is that the current version will not query under localities immediately under the country level.

It is not possible to display photographs or reproduce sound attributes.

INTERNETWORKING ENVIRONMENT

Same as ISODE. ISODE supports TCP/IP, TP0, and X.25.

HARDWARE PLATFORMS

Should be the same as ISODE in general.

SOFTWARE PLATFORMS

DE requires the ISODE (current release 7.0) libraries.

AVAILABILITY

DE is openly available as part of ISODE and as part of the COSINE DUA package. Available by FTAM and FTP, source code freely available.

NAME

Directory 500(tm)
OSIware Inc.

LAST MODIFIED

July, 1991

KEYWORDS

Commercially Available, DSA/DUA, RFC-1006, Sun, X.25

ABSTRACT

Full implementation of the X.500 recommendations. Includes DUA, DSA & various utilities. Written in ANSI-C / C, and runs on the Unix system.

COMPLETENESS

All DAP and DSP operations implemented. Strong authentication not yet implemented. Schema contains all of X.520, X.521, QUIPU & NYSERNet definitions.

INTEROPERABILITY

Interworks with QUIPU, Nist, Retix, ICL, Nixdorf.

BUGS

None

CAVEATS AND GENERAL LIMITATIONS

None

INTERNETWORKING ENVIRONMENT

RFC-1006 with TCP/IP
TP0 with X.25

HARDWARE PLATFORMS

Runs on Sun-3, Sun-4

SOFTWARE PLATFORMS

For SunOS 4.X with Sunlink X.25 6.0

AVAILABILITY

Commercially available from:

OSIware Inc. Tel: +1-604-436-2922
4370 Dominion Street, Suite 200 Fax: +1-604-436-3192
Burnaby, B, Canada V5G 4L7

NAME

DISH-VMS 2.0
ACIDO Project

LAST MODIFIED

July, 1991

KEYWORDS

Available via FTAM, Available via FTP, DUA Only, Free, Needs ISODE, RFC-1006, VMS, X.25

ABSTRACT

This Directory User Agent interface was ported to the VMS operating system using ISODE 6.0. It is part of the results of collaboration project called ACIDO, between RedIRIS (national network R & D in Spain) and the "Facultad de Informatica de Barcelona (Universidad Politecnica de Cataluna)". The main objective of this development was to provide access to the directory to all those affiliated centres to the Spanish National R & D network using VMS machines. Any other use of this software it is no within RedIRIS objectives and therefore it is not RedIRIS responsibility.

COMPLETENESS

The same as DUA (QUIPU 6.1).

INTEROPERABILITY

QUIPU 6.1

PILOT CONNECTIVITY

Used in RedIRIS Directory Pilot Project to access the DSAs (QUIPU).

BUGS

You can report bugs to: isode@fib.upc.es

CAVEATS AND GENERAL LIMITATIONS

The interface is equivalent to the UNIX one except for the option -pipe which is not supported.

The users can have a quipurc file to configure their work environments with DISH. This file should reside at the SYS$LOGIN directory of the user and it should be called "quipurc." (in UNIX it's called .quipurc)

INTERNETWORKING ENVIRONMENT

RFC-1006 with TCP/IP, TP0 with X.25

HARDWARE PLATFORMS

VAX

SOFTWARE PLATFORMS

VAX/VMS 5.3
VAX PSI 4.2
VMS/ULTRIX Connection 1.2

AVAILABILITY

Executables can be freely distributed for non-commercial use.
Transfer mode binary.
FTP user anonymous sun.iris-dcp.es (130.206.1.2)
FTAM, user anon
TSEL= <0103>H
INT-X25= 21452160234012
IXI= 2043145100102
ISO-CLNS= 39724F1001000000010001000113020600100200 (COSINE P4.1)
File: /isodevms/dishVMS2.BCK.Z compress SAVE_SET file (1.6 Mbytes)
File: /isodevms/lzdcm.exe to uncompress the file

NAME

DIXIE
University of Michigan

LAST MODIFIED

November, 1991

KEYWORDS

Available via FTP, DUA Light Weight Client, Free, Source, UNIX, Multiple Vendor Platform, Needs ISODE

ABSTRACT

The DIXIE protocol is used to give X.500 access to platforms that have only TCP/IP access. The DIXIE server is an intermediate protocol server that communicates with Internet clients on one side using a text-based UDP/TCP protocol and an X.500 DSA on the other side using DAP. The protocol is fully described in RFC 1246. A subset of the X.500 DAP is exported to the clients through the DIXIE protocol. There is a DIXIE API provided in the form of a library of C-callable routines.

The DIXIE protocol and server are being used by the following products/projects:

UD, a simple command line white pages DUA for Unix machines (distributed with the DIXIE server)

maX.500, a white pages DUA for the Macintosh (available from the same place as the DIXIE server)

Network monitoring of DSAs by our Network Operations Center

Lookup and display of caller identification based on telephone caller ID (using ISDN).

COMPLETENESS

The DIXIE protocol does not support access to all X.500 features and operations. All DAP operations except Abandon are supported. General searches (including multiple component searches) are supported. The DIXIE protocol supports none and simple authentication. A subset of the service controls are supported.

INTEROPERABILITY

The current implementation of the DIXIE server works with the QUIPU DSA and DAP library.

PILOT CONNECTIVITY

The DIXIE server has been tested in the Internet and PARADISE pilots. It provides full DUA Connectivity subject to the limitations discussed above under completeness.

BUGS

There are no known outstanding bugs. But reports should be sent to x500@umich.edu.

CAVEATS AND GENERAL LIMITATIONS

None, aside from those mentioned above under completeness.

INTERNETWORKING ENVIRONMENT

DIXIE clients use TCP or UDP to communicate with the DIXIE server. The DIXIE server uses RFC-1006 with TCP/IP to communicate with the DSA, though other transport mechanisms for DSA communication should be possible.

HARDWARE PLATFORMS

The DIXIE server is known to run on Sun 3, Sun 4, and DEC 3100 platforms. It should run on any UNIX platform. The DIXIE library is known to run on the same platforms, and also on the Macintosh.

SOFTWARE PLATFORMS

The DIXIE server and library is known to run under SunOS 3.5, SunOS 4.1.1, Ultrix 4.1 and 4.2. The DIXIE library also runs on the Macintosh System Software 6 or later.

AVAILABILITY

This software is openly available. It may be obtained by anonymous FTP from terminator.cc.umich.edu in the directory ~ftp/x500. Documentation on the DIXIE protocol is provided along with the source code, which includes source for the DIXIE server, DIXIE library, and the UD client.

This software was developed at the University of Michigan by Bryan Beecher, Tim Howes, and Mark Smith of the ITD Research Systems Unix Group. It is subject to the following copyright.

NAME

DS-520
DS-521
Retix

LAST MODIFIED

November, 1991

KEYWORDS

API, Commercially Available, DSA/DUA, DUA Connectivity, DSA Connectivity, Multiple Vendor Platforms, OSI Transport, RFC-1006, Source, UNIX

ABSTRACT

DS-520 X.500 Distributed Directory Services for UNIX System V and DS-521 X.500 Directory User Agent (DUA) for UNIX System V form an integral part of the Retix OSI Networking Products family. Designed for systems vendors, public carriers, and other OEMs, DS-520 is a complete high-performance implementation of X.500 in source code form, including a DUA, DSA Manager (DSAM), and DSA. DS-521 represents a subset of this product offering. It provides the DUA portal into the directory, which, for example, meets the needs of software vendors who plan to provide application packages with X.500 Directory interaction capabilities. Within these two offerings, the DUA possesses two forms of interface. The first form, the DUA with User Interface, provides an interactive character-based user interface for users of Directory services. The user agent provides access to the Directory via basic Directory service requests. The second form, the DUA with Programmatic Interface provides a standardized programmatic interface to application programs that must access Directory information. The interface is conformant to the X/Open Object Management (XOM) and X/Open Directory Services (XDS) standards. This component provides all functionality related to Directory access and general OSI services down to the session layer. The DSAM provides an interactive character oriented user interface to a Directory administrator. The DSAM provides management functions either local to or remote from a DSA. Both the DUA and the DSAM are useful in the training, management, and manipulation of Directory entries maintaining operational and user attribute information. The DSA maintains Directory database information and provides users the ability to read/compare, modify, search, and manage entries within the database. It maintains all or fragments of the Directory Information Base (DIB) and provides abstract service ports for DUAs and DSAs over DAP and DSP protocols respectively.

COMPLETENESS

DS-520 represents a complete implementation of the 1988 X.500 Recommendations with the exception of strong authentication as outlined in X.509. It is conformant to NIST, EWOS, and UK GOSIP Directory profiles. It provides session through application layer protocol support and hence incorporates ROSE, ACSE, Presentation, and Session within its product stack. In addition to including all the attribute types, syntaxes, and object classes defined in X.520 and X.521, the DS-520 includes support for those specified in the 1988 X.400 Recommendation X.402, Annex A. Remote on-line management of the DSA is supported by means of Network Management Forum CMIP.

DS-521 represents a complete implementation of the X/Open Object Management (OM) and X/Open Directory Services (XDS) standards. It also incorporates session through application layer protocol support and thus includes ROSE, ACSE, Presentation, and Session within its product stack.

INTEROPERABILITY

The DS-520 has been tested to interoperate with Banyan (DAP), CDC (DSP), IBM, ICL, OSIWare, Nixdorff, Unisys (DSP), Wollongong (DAP), and 3-Com (DSP).

The DS-521 subset has undergone no separate interoperability testing.

PILOT CONNECTIVITY

DSA Connectivity provided by the DS-520: The DSA provides complete support for the X.511 Abstract Service Definition, the directoryAccessAC and the directorySystemAC defined in the X.519 Protocol Specifications, and the Distributed Directory defined in the X.518 Procedures for the Distributed Directory. It supports all the object classes, attribute types, and attribute syntaxes defined in X.520 and X.521. It does not support the Internet DSP however.

DUA Connectivity provided by both the DS-520 and DS-521: The DUA provides complete support for the X.511 Abstract Service Definition and the directoryAccessAC defined in the X.519 Protocol Specifications. The DUA with User Interface supports only a subset of the X.500 attributes and object classes defined in X.520 and X.521. The DUA with Programmatic Interface, however, does support all the object classes, attribute types, and attribute syntaxes defined in these two recommendations.

BUGS

Product Action Requests (PARs) stemming externally from customers and internally from customer service and quality assurance engineers are generated and published in the form of weekly reports. A description and status of these PARs are provided to customers possessing software maintenance agreements.

CAVEATS AND GENERAL LIMITATIONS

DS-520 and DS-521 are source code products ported to UNIX System V Release 3 and 4. Makefiles to generate the system are provided for the AT&T System V, SCO, and Interactive UNIX systems.

INTERNETWORKING ENVIRONMENT

DS-520 and DS-521 offer two main compile time configuration options and hence internetworking configurations. In the first of these, they interface to the UNIX System V Transport Library Interface (TLI). The TLI provides a path between the session layer of a UNIX OSI application process and an OSI transport provider installed in the UNIX kernel. The latter transport provider may take the form of a Retix Unix LAN (LT-610) or WAN (WT-325) transport product. The second main option utilizes the UNIX System V ACSE/Presentation Library interface (APLI and the A/P Library), which provides OSI ACSE and Presentation layer services. The Retix AP-240 Presentation syntax manager product serves to map the standard Retix Presentation layer interface to the AT&T APLI. The APLI upper layers services may be provided by the Retix UL-220 product. UL-220 is the Retix implementation of the AT&T Open Networking Platform Upper Layer Services module and includes the A/P library, as well as the OSI ACSE, Presentation, and Session services.

DS-520 and DS-521 may also run on top of the TCP/IP stack by means of the Retix MP-120 product. MP-120 is a STREAMS based driver that implements RFC-1006 and thus allows OSI applications to run over a network based on the Internet suite of protocols (TCP/IP). Its main function provides a conversion between the TCP stream to the data packets required by OSI Transport Class 0 protocol and vice versa. As part of this process, it converts TCP/IP 32-bit addresses to hex values for use with OSI applications.

HARDWARE PLATFORMS

Being source code products ported to the UNIX System V Release 3 and 4 operating system environment, DS-520 and DS-521 are hardware platform independent. They currently both have sample portations and test configurations on various Intel 80386 platforms running Unix System V Release 3 and 4.

SOFTWARE PLATFORMS

Currently, DS-520 and DS-521 include reference implementations for the AT&T System V Release 4, SCO UNIX System V/386 Version 3.2.2, and the Interactive UNIX System V/386 Version 2.2 operating systems. Raima Corporation's db_Vista III Version 3.1 serves as the database engine for the Directory product.

AVAILABILITY

DS-520 and DS-521 are commercially available from:

Retix
2401 Colorado Avenue
Santa Monica, California
90404-3563 USA

Sales and Information: 310-828-3400
FAX: 310-828-2255

NAME

HP X.500 Distributed Directory Software
Hewlett Packard

LAST MODIFIED

July, 1991

KEYWORDS

API, CLNP, Commercially Available, DSA/DUA, HP, X.25

ABSTRACT

HP's Distributed Directory Software is a fully distributed Directory that supports both the DAP and DSP protocols, which were specified in the 1988 CCITT/ISO X.500 documents. Besides implementing the standard, we have also put in proprietary access control and replication. These additional features will be migrated to the standard definition at the time that they are stable. Users are able to define their own attributes, objects classes and DIT structure rules.

In order to make this software easy to use a set of menu driven screens have been provided. There are easy to use data access and data management screens. For system administrators, these is also a set for screens that are used to help configure the servers and manage the schema. Startup and Shutdown utilities are also included.

For application developers an X/Open-APIA XDS API is provided, along with some helper routines that help reduce development time. The XDS API includes the following functions:

Bind
Read
Search
Add
Remove
Unbind
Version

A subset of the X/Open-APIA Object Management (XOM) functions are available thru the interface. The subset are those that are necessary to perform the directory operations.

For bulk operations a batch interface is also available.

COMPLETENESS

This software implements the 1988 X.500 CCITT/ISO Standard. It fully supports DAP and DSP, minus strong authentication. By default it contains all of the X.520 Attributes and the X.521 Syntaxes and Object Classes. Additionally, the Annex B DIT Structure can be enforced.

INTEROPERABILITY

Interoperability testing will be undertaken as new X.500 products are introduced into the market.

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

No major ones at this time.

CAVEATS AND GENERAL LIMITATIONS

This is pilot software for organizations who wish to learn about HP's X.500 offering.

INTERNETWORKING ENVIRONMENT

TP0 or TP4 on 802.3 or X.25

HARDWARE PLATFORMS

HP-9000 800	Minicomputer
HP-9000 300	Workstation
	with at least 8 M of internal memory
	with 9 M of available disk space for the software

SOFTWARE PLATFORMS

Distributed and Supported for HP-UX version 7.0.

AVAILABILITY

Limited Commercial Availability.

For more information in the U.S. call 1-800-752-0900. Outside of the U.S. please contact your local HP Sales Office.

NAME

INTERACTIVE Systems' X.500 DSA/DSAM
INTERACTIVE Systems' X.500 DUA
INTERACTIVE Systems Corporation

LAST MODIFIED

July, 1991

KEYWORDS

API, Commercially Available, DSA/DUA, Multiple Vendor Platforms, OSI Transport, RFC-1006, UNIX

ABSTRACT

The INTERACTIVE Systems X.500 DSA/DSAM and X.500 DUA provide a complete implementation of the OSI X.500 Directory Systems Agent, Directory Systems Agent Manager, and Directory Services User Agent. These software packages allow remote access for Directory Systems Agents and include the following protocols:

- Directory System Protocol (DSP)
- Directory Access Protocol (DAP)
- Common Management Information Protocol (CMIP)
- Remote Operations Service Element (ROSE)
- Association Control Service Element (ACSE)
- Presentation services
- BCS Session services
- DBMS and utilities
- X/Open XDS API (included in the DUA)

These products will be available in Q3 1991 in source code form only.

COMPLETENESS

These products provide:

- a complete implementation of the X.500 distributed Directory

- a DUA with command line UI and X/Open Directory Services (XDS) API

- a Multiprocess DSA with integral high performance DBMS

- remote or local CMIP based DSA management

- a DSA manager that provides on-line DSA monitoring, control, Directory schema manipulation, and DUA functions

- Support for all 1988 X.500, 1988 X.400, and MAP/TOP 3.0 object types and the capability to add new object types

- Conformance with NIST, EWOS, and U.K. GOSIP X.500 Directory profiles

INTEROPERABILITY

Not available at this time.

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

Not available at this time.

CAVEATS AND GENERAL LIMITATIONS

Not available at this time.

INTERNETWORKING ENVIRONMENT

The INTERACTIVE Systems implementation of X.500 Directory Services will operate over both RFC-1006 (in TCP/IP Based networks) and over the Retix Local Area and Wide Area Network services.

HARDWARE PLATFORMS

These products are available in source code form only and can be ported to any UNIX-based computers.

SOFTWARE PLATFORMS

These products operate in the UNIX System V Release 3.2 and System V Release 4 operating systems.

AVAILABILITY

Both products will be available in Q3 1991. For more information contact:

INTERACTIVE Systems Corporation
1901 North Naper Boulevard
Naperville, IL. 60563-8895
PHONE: (708) 505-9100 extension 232
FAX: (708) 505-9133 Attn.: Jim Hancock

NAME

Mac-ISODE
Computer Science Department of Massey University

LAST MODIFIED

November, 1991

KEYWORDS

API, Available via FTP, DSA/DUA, Free, Macintosh, Needs ISODE, RFC-1006, Source

ABSTRACT

Mac-ISODE is a reasonably complete port of ISODE version 7.0. It sits on top of Mac TCP and its development environment is MPW with the GNU C compiler See entry for QUIPU/ISODE for a detailed description of the DSA/DUA.

COMPLETENESS

See entry for QUIPU/ISODE.

INTEROPERABILITY

See entry for QUIPU/ISODE.

PILOT CONNECTIVITY

Not tested.

BUGS

Macintosh related problems should be sent to PKay@massey.ac.nz.

CAVEATS AND GENERAL LIMITATIONS

No testing of the DSA has been done.

INTERNETWORKING ENVIRONMENT

See entry for QUIPU/ISODE.

HARDWARE PLATFORMS

Macintosh, >1Mb memory, System 6.x

SOFTWARE PLATFORMS

Macintosh, >1Mb memory, System 6.x

AVAILABILITY

The Macintosh part of the package is freely available. Anonymous FTP from cc-vms1.massey.ac.nz (130.123.1.4)

NAME

MacDish
NASA Ames Research Center

LAST MODIFIED

July, 1991

KEYWORDS

DUA Light Weight Client, Limited Functionality, Macintosh, Needs ISODE, Potentially Unavailable

ABSTRACT

MacIntosh interface which connects to a TCP/IP port attached to dish running on UNIX or other dish-capable host. Uses a point-and-click interface to simplify dish access.

COMPLETENESS

No authentication, no modify/delete/add ability.

INTEROPERABILITY

Interoperates with QUIPU/dish

PILOT CONNECTIVITY

Being used in the White Pages Pilot Project.

BUGS

Not complete yet, so there are some bugs (primarily formatting, window management).

CAVEATS AND GENERAL LIMITATIONS

Not a terribly capable interface.

INTERNETWORKING ENVIRONMENT

Pure TCP/IP. Does not require OSI stack support.

HARDWARE PLATFORMS

MacDish runs on Macintosh computers

SOFTWARE PLATFORMS

MacTCP and MacOS 6.0.x.

AVAILABILITY

Not yet available. Contact is:

Mylene Marquez
MS 233-18
NASA Ames Research Center
Moffett Field, CA 94035-1000
(415) 604-3836

NAME

maX.500
University of Michigan

LAST MODIFIED

November, 1991

KEYWORDS

Available via FTP, DUA Light Weight Client, Free, Macintosh

ABSTRACT

maX.500 is a Macintosh X.500 directory application useful for displaying and modifying white pages information about people. It runs on top of the DIXIE protocol (described in RFC 1246). maX.500 is currently in production release 1.1 within the University of Michigan and several other places.

Features include the ability to display and modify the following attributes: title, description, commonName, uid, mail, postalAddress, homePostalAddress, telephoneNumber, facsimileTelephoneNumber, homePhone. Photos can also be displayed. The software also provides access to the finger protocol. Various preferences are user-tailorable, including caching.

COMPLETENESS

maX.500 uses the DIXIE protocol to access X.500 and thus is subject to the same completeness restrictions as DIXIE. It provides Read, Search, and Modify capabilities.

INTEROPERABILITY

Works with the DIXIE server, which works with the QUIPU DSA and DAP library.

PILOT CONNECTIVITY

It has been tested (in conjunction with the DIXIE server) in both the Internet and PARADISE pilots.

BUGS

No outstanding bugs are known. But reports should be sent to x500@itd.umich.edu.

CAVEATS AND GENERAL LIMITATIONS

maX.500 is heavily oriented to white pages information and thus general access to the DIXIE protocol is not provided.

INTERNETWORKING ENVIRONMENT

maX.500 uses the DIXIE protocol and thus TCP to communicate with the DIXIE server. The Macintosh needs to have MacTCP installed.

HARDWARE PLATFORMS

Mac Plus or newer machine with one megabyte or more of memory.

SOFTWARE PLATFORMS

Apple System Software 6.0 or above (including System 7), with MacTCP installed.

AVAILABILITY

This software is openly available. It may be obtained by anonymous FTP from terminator.cc.umich.edu in the directory ~ftp/x500.

This software was developed at the University of Michigan by Mark Smith of the ITD Research Systems Unix Group and is subject to the following copyright.

NAME

OSI Access and Directory
Control Data Corporation

LAST MODIFIED

November, 1991

KEYWORDS

Commercially Available, DUA Connectivity, DSA Connectivity, API, DSA/DUA, OSI CLNP, RFC-1006, X.25, MIPS (under Control Data's EP/IX OS).

ABSTRACT

OSI Access and Directory includes a QUIPU (version 6.6) based implementation of Directory with enhancements including:

- TP4 CLNP connectivity
- Directory API based on the X.400 API
- Support for X.400 objects
- Integration with Control Data's X.400 MHS products
- Curses based user interface
- A DUA daemon that provides Directory access for applications
- Enhanced photo attribute support
- ACL enhancements
- DIXIE, DAD and PH.X500 support

COMPLETENESS

As per QUIPU.

INTEROPERABILITY

OSI Access and Directory can interoperate with any QUIPU based Directory. It has also been informally interoperated with RETIX and UNISYS implementations.

PILOT CONNECTIVITY

DUA Connectivity. DSA Connectivity without InternetDSP support.

BUGS

As per QUIPU.

CAVEATS AND GENERAL LIMITATIONS

As per QUIPU.

INTERNETWORKING ENVIRONMENT

As per QUIPU (RFC-1006 with TCP/IP, TP0 with X.25) plus TP4 over CLNP.

HARDWARE PLATFORMS

Control Data 4000 systems.

SOFTWARE PLATFORMS

Control Data EP/IX.

AVAILABILITY

Commercially available from:

Control Data Corporation
Computer Products Marketing
4000 Series Networking
HQW10H
P.O. Box 0
Minneapolis, MN 55440-4700
USA

1-800-345-6628

NAME

OSI-DSA
Unisys

LAST MODIFIED

November, 1991

KEYWORDS

API, CLNP, Commercially Available, DSA Only, RFC-1006, Source, Unisys, X.25

ABSTRACT

OSI-DSA provides a Directory System agent for controlled access to the OSI Directory Information Base. It provides full support for the joint ISO/IEC IS-9594 International standard and CCITT X.500 Recommendations 1988 protocols necessary for implementing the Directory Information Base distributed across a number of DSA's.

The product also includes an Administration User interface program, to allow a human administrator to construct and maintain the local Directory Information.

Specific features provided by the Directory System Agent include:

(i) Support of the directoryAccessAC and directorySystemAC application contexts (i.e. both Directory Access Protocol (DAP) and Directory System Protocol (DSP)

(ii) Bind Security levels of none and simple unprotected.

(iii) Capability of acting as a first level DSA.

(iv) Support for chaining and multi-casting where necessary in handling distributed operations. Also supports the return of referrals.

(v) Support for all attribute types and syntaxes defined in X.520. Users are also able to define their own attributes and syntaxes.

(vi) Support for all the object classes and attribute sets defined in X.521. Users are also able to define their own object classes and attribute sets. Support is also provided for a NAME-BINDING specification, for defining the

Directory Information Tree (DIT) structure.

(vii) An access control mechanism based on the ISO access control working papers to allow for controlled access and maintenance of Directory entries and attributes.

(viii) Logging of errors and significant Directory events, as well as optional trace information.

(ix) The OSI-DSA utilizes the services of ROSE (X.219) and ACSE (X.217) as defined in clause 8 of X.519

The Administration program provides the following functions

(i) An interface to each of the basic Directory Operations of Read, Compare, List, Search, Add, Modify, ModifyRDN.

(ii) A Dump/Load utility to dump the information in the local DIB into an ASCII file and load it again into the DIB from such a file.

(iii) Knowledge Reference maintenance facilities to Add, Delete Modify and Read all types of Knowledge References.

(iv) Facilities to control the operation of local Directory processes.

(v) Control over the level of logging and tracing.

COMPLETENESS

The OSI-DSA provides all functionality defined in, and is fully conformant to, the joint ISO/IEC IS-9594 International standard and CCITT X.500 Recommendations 1988, and the NIST 1988 Stable agreements on Directory Services.

The only exception is that no support is provided for strong authentication or digital signatures.

Conformance with respect to clause 9 of X.519:

(i) The DSA supports both the directoryAccessAC and directorySystemAC application contexts.

(ii) The DSA is capable of acting as a first-level DSA.

(iii) The chained mode of operation as defined in X.518 is supported.

(iv) Bind Security levels of none and simple unprotected are supported.

(v) All attribute types and syntaxes defined in X.520 are supported. Users are also able to define their own attributes and syntaxes.

(vi) All the object classes and attribute sets defined in X.521 are supported. Users are also able to define their own object classes and attribute sets. Support is also provided for a NAME-BINDING specification, for defining the Directory Information Tree (DIT) structure.

(vii) The DSA conforms to all the static requirements defined in clause 9.2.2 of X.519

(viii) The DSA conforms to all the dynamic requirements defined in clause 9.2.3 of X.519

INTEROPERABILITY

The product was demonstrated at "Interop 91" in San Jose, October 1991 as part of the OSI Showcase demo involving several vendors' directory products.

Informal interoperability has been achieved against the ISODE 6.0 QUIPU Directory implementation. Interoperability testing against other vendors is in progress.

Formal interoperability testing is awaiting the soon to be completed OSInet X.500 interoperability test suite.

PILOT CONNECTIVITY

Not tested.

BUGS

Full customer support is provided via your local Unisys Customer Services Organization.

CAVEATS AND GENERAL LIMITATIONS

Results returned via the OSI-DSA are presently limited to 32K in the current release, which is in line with the 1988 NIST agreements.

Patches for the Unix V.4 release may be made available on request to raise this limit to 1Mb.

The product currently does not provide any support for replication, although development work is in progress, based on the current ISO Draft proposal for Replication.

INTERNETWORKING ENVIRONMENT

OSI-DSA runs over all communications environments supported by the Unisys OSI stack product (see Software platforms). Currently these support TP0, TP2, TP3 and TP4 over X.25 and TP4 over CLNP on 802.3 and X.25. Support for RFC1006 over TCP/IP is under development.

HARDWARE PLATFORMS

The product is available on all Unisys Unix 6000 Series machines.

Source code is available for portation to non-Unisys platforms.

SOFTWARE PLATFORMS

The product is distributed and supported for Unix System V.3 and Unix System V.4.

On Unix V.3, it requires the Unisys Application Presentation Service OSI stack software (APS), and Unisys Transport Network Service software (TNS). On Unix V.4, it requires the integrated Unisys OSI stack software product (STK). These services are accessed via the ROSLI (ROSE) and APLI (ACSE) programming interfaces which are currently the subject of standardization efforts by XOpen and Unix International.

A runtime version of either the Informix or Oracle relational data-base products is required for the Directory Information Base.

AVAILABILITY

Unisys Unix OSI Directory System Agent is commercially available. For information on porting to non-Unisys platforms, contact:

Socs Cappas
Australian Centre for Unisys Software
115 Wicks Rd
North Ryde
N.S.W, 2113
Australia
socs@syacus.acus.oz.au
Ph: 61 2 390 1312

For any other information contact your local Unisys marketing representative or:

Unisys Corporation
Corporate Marketing
Mail Drop B-130
Blue Bell, PA 19424
USA

NAME

OSI-DUA
Unisys

LAST MODIFIED

November, 1991

KEYWORDS

API, CLNP, Commercially Available, DUA Only, RFC-1006, Source, Unisys, X.25

ABSTRACT

OSI-DUA is a Unix C Program interface library. It allows OSI or user applications to access the services of an X.500 conformant Directory, by making calls to a library of C routines.

Specific features provided by this program interface library are as follows:

(i) Connection to any remote X.500 conformant DSA via an OSI stack, or connection to a co-resident Unisys OSI DSA via IPC mechanisms.

(ii) All operations defined in the directoryAccessAC application context (Bind, UnBind, Read, Compare, Search, List, AddEntry, ModifyEntry, ModifyRDN, Abandon, DeleteEntry).

(iii) Directory Bind security levels of none and simple unprotected.

(iv) Execution of both blocking and non-blocking operations. (A non-blocking call to the library will return immediately, allowing for results to be obtained once the operation has completed)

(v) Acceptance of multiple concurrent non-blocked operations on the one user session.

(vi) The DUA utilizes the services of ROSE (X.219) and ACSE (X.217) as defined in clause 8 of X.519

COMPLETENESS

When communicating with a Remote DSA the DUA library is fully conformant with the Directory Access Protocol detailed in the X.500 Recommendations/IS-9594 standards.

Conformance with respect to clause 9 of X.519:

(i) All operations defined in the directoryAccessAC application context (Bind, UnBind, Read, Compare, Search, List, AddEntry, ModifyEntry, ModifyRDN, Abandon, DeleteEntry) are supported.

(ii) Directory Bind security levels of none and simple unprotected are supported.

(iii) The directoryAccessAC application context is supported as specified in clause 7 of X.519.

(iv) The DUA conforms to the mapping onto used services as defined in clause 8 of X.519.

INTEROPERABILITY

Informal interoperability has been achieved against the ISODE 6.0 QUIPU Directory implementation. Interoperability testing against other vendors is in progress.

Formal interoperability testing is awaiting the soon to be completed OSInet X.500 interoperability test suite.

PILOT CONNECTIVITY

Not tested.

BUGS

Full customer support is provided via your local Unisys Customer Services Organisation.

CAVEATS AND GENERAL LIMITATIONS

The present OSI-DUA does not provide for the automatic handling of referrals by the interface library. However interface routines are provided which allow referrals to be acted upon by the user application.

The present OSI-DUA provides a proprietary C programming interface. An XOpen XDS conformant interface is currently under development.

INTERNETWORKING ENVIRONMENT

OSI-DUA runs over all communications environments supported by the Unisys OSI stack product (see Software platforms). Currently these support TP0, TP2, TP3 and TP4 over X.25 and TP4 over CLNP on 802.3 and X.25. Support for RFC1006 over TCP/IP is under development.

HARDWARE PLATFORMS

The product is currently available on all Unisys Unix 6000 Series machines.

Source code is available for portation to non-Unisys platforms.

SOFTWARE PLATFORMS

The product is distributed and supported for Unix System V.3 and Unix System V.4.

On Unix V.3, it requires the Unisys Application Presentation Service OSI stack software (APS), and Unisys Transport Network Service software (TNS). On Unix V.4, it requires the integrated Unisys OSI stack software product (STK). These services are accessed via the ROSLI (ROSE) and APLI (ACSE) programming interfaces which are currently the subject of standardization efforts by XOpen and Unix International.

AVAILABILITY

Unisys Unix OSI Directory System Agent is commercially available. For information on porting to non-Unisys platforms, contact:

Socs Cappas
Australian Centre for Unisys Software
115 Wicks Rd
North Ryde
N.S.W, 2113
Australia
socs@syacus.acus.oz.au
Ph: 61 2 390 1312

For any other information contact your local Unisys marketing representative or:

Unisys Corporation
Corporate Marketing
Mail Drop B-130
Blue Bell, PA 19424
USA

NAME

POD
Brunel University

LAST MODIFIED

November, 1991

KEYWORDS

Available via FTAM, Available via FTP, DUA Only, Free, Included in ISODE, Limited Functionality, Multiple Vendor Platforms, Needs ISODE, RFC-1006, Source, UNIX

ABSTRACT

POD (POpup Directory) is an X.500 DUA interface for the X Window System. POD is a first attempt at a multiwindow directory tool. It offers a simplified interfaces to the basic X.500 operations of read, search, list and modify entry.

POD does not provide any sophisticated access to the DSA. Operations are performed synchronously. The Directory is thus presented as is, i.e. a hierarchical tree of information, with the user required to "navigate" the DIT in order to locate required information.

POD is available as part of the ISODE release from version 6.0 onwards.

COMPLETENESS

88 standard: strong authentication not implemented

INTEROPERABILITY

Believed to be compliant, though untested.

PILOT CONNECTIVITY

DUA Connectivity: POD is in use in many directory pilots, certainly including PARADISE and the Internet.

BUGS

Bugs to x500@brunel.ac.uk

INTERNETWORKING ENVIRONMENT

TP0 over TCP/IP (as ISODE)

HARDWARE PLATFORMS

Most UNIX machines

SOFTWARE PLATFORMS

UNIX
MIT X libraries (release 11 version 4)
ISODE/QUIPU libraries (version 6.7 upwards)

AVAILABILITY

Openly available as part of the ISODE release. Sources are freely available for commercial or non-commercial use from:

src.brunel.ac.uk [134.83.128.3]

Files are:

x500/pod.tar.Z
x500/sd.tar.Z

Contacts:

Andrew.Findlay@brunel.ac.uk +44 1 895 74000 x 2512
Damanjit.Mahl@brunel.ac.uk +44 1 895 74000 x 2946
x500@brunel.ac.uk

Postal Address:

Andrew Findlay
Computer Centre
Brunel University
Cleveland Road,
Uxbridge, Middlesex
UB8 3PH
United Kingdom

NAME

psiwp
Performance Systems International Inc.

LAST MODIFIED

July, 1991

KEYWORDS

Available via FTP, DUA Light Weight Client, DUA Only, Free, Limited Functionality, Macintosh, Needs ISODE, Source

ABSTRACT

psiwp is a Macintosh Front End to White Pages service. It is a graphical user interface implementing a partial-DUA. It is based on the ISODE QUIPU X.500 implementation and the Directory Assistance Protocol (DAP).

psiwp is a Macintosh application tailored specifically to provide easy access to the Directory for the purposes of performing White Pages searches. Implements User-Friendly Naming scheme developed in IETF OSI-DS Working Group.

psiwp implements a Directory Assistance Protocol (DAP) client.

COMPLETENESS

Compliant with X.500 standards to the extent that the QUIPU implementation is.

INTEROPERABILITY

Successfully interoperates with QUIPU DSAs

PILOT CONNECTIVITY

Being used in the White Pages Pilot Project.

BUGS

Support is available (for registered users of psiwp only) from psiwp-help@psi.com.

CAVEATS AND GENERAL LIMITATIONS

psiwp is not a general-purpose DUA. It was designed to be a special-purpose front-end for performing White Pages searches and thus, in the interests of simplification, does not provide the full range of functionality supported by the X.500 standard. A Directory Assistance server (available as part of the ISODE distribution) must also be run by sites that do not want to run psiwp against either of the two White Pages Pilot Project service machines, wp1.psi.net and wp2.psi.net.

INTERNETWORKING ENVIRONMENT

Runs on Macintoshes as a Finder or MultiFinder application.

HARDWARE PLATFORMS

Runs on Macintoshes that support MacTCP. Requires an ethernet board or AppleTalk connectivity. At least 1MB of memory is required, and while psiwp will run on most forms of Macintoshes, a Mac-II is recommended.

SOFTWARE PLATFORMS

Requires MacTCP 1.0 or later, and Finder (or Multifinder) 6.x (Finder 7.0 WILL NOT WORK). Requires ISODE Version 6.8 or later.

AVAILABILITY

psiwp is shareware available for anonymous ftp from uu.psi.com [136.161.128.3] in pilot/PSIWP.Hqx. A nominal fee is charged upon registration as a PSIWP user.

Source code to the psiwp application may be licensed from PSI Inc. as part of PSI's Software Source Distribution (SSD). Email to

ssd-info@psi.com

will elicit an automatic response containing information on the SSD. Ordering information may be obtained by sending electronic mail to

ssd-order@psi.com

or contacting PSI at

Performance Systems International Inc.
11800 Sunrise Valley Drive
Suite 1100
Reston, Virginia 22091.

1.703.620.6651
1.800.82PSI82 (1.800.827.7482)
1.703.620.4586 (fax)

NAME

QUIPU
ISODE

LAST MODIFIED

July, 1991

KEYWORDS

API, Available via FTAM, Available via FTP, CLNP, DEC Ultrix, DSA/DUA, Free, HP, MIPS, Macintosh, Multiple Vendor Platforms, OSI Transport, RFC-1006, Source, Sun, UNIX, X Window System, X.25

ABSTRACT

QUIPU is part of the ISODE which is an openly available implementation of the upper layers of OSI. QUIPU provides a X.500 Directory System Agent (DSA) and a set of Directory User Agents (DUA) aimed at different terminal types and modes of interaction

QUIPU was first publicly demonstrated at ESPRIT in November 1988. QUIPU is being used extensively in the European PARADISE project, the White Pages Pilot Project and the Australian pilot. A QUIPU DSA is being used at the ROOT node of the Pilot DIT and is being used as most country level DSAs.

QUIPU provides its own solutions to area not specified by the 1988 standards such as replication and access control.

COMPLETENESS

QUIPU is aligned to the 1988 ISO IS and the NIST OIW Directory Implementors Guide Version 1, with the following exceptions:

Strong authentication is not implemented.

QUIPU does not enforce the bounds constraints on attributes, filters or APDU size.

T.61 string formatting characters are not rejected.

If a DN is supplied with no password in an unprotected simple bind, QUIPU does not always check to see if the DN exists. If the DSA connected to can say authoritatively the DN does not exist, the association is rejected. However, if a chain operation is required to check the DN, the bind IS allowed.

When comparing attributes of UTCtime syntax, if the seconds field is omitted, QUIPU does not perform the match correctly (i.e., the seconds field in the attribute values should be ignored, but are not).

QUIPU always supplies the optional Chaining argument ‘‘originator’’ even if the CommonArgument ‘‘requestor’’ is used.

QUIPU always supplies the optional Chaining argument ‘‘target’’ even if the base object in the DAP arguments is the same.

The object class ‘‘without an assigned object identifier’’ is not recognized unless the ‘‘alias’’ object class is also present.

Non Specific Subordinate References are never followed by a QUIPU DSA, but they are passed on correctly to the client if generated.

INTEROPERABILITY

QUIPU has interworked with a number of other implementations, and has no know problems in such interworking.

PILOT CONNECTIVITY

QUIPU is in use in many directory pilots, certainly including PARADISE and the White Pages Pilot Project.

BUGS

Problems should be reported to quipu-support@cs.ucl.ac.uk.

CAVEATS AND GENERAL LIMITATIONS

None.

INTERNETWORKING ENVIRONMENT

QUIPU users TP0 over X.25, CONS and TCP (using RFC-1006) or TP4 over SunLink OSI.

The DSA knows about the problems of unconnected networks and makes chain/refer choices based on the network connectivity. Using this an X.25 only DSA can access data from an Internet only DSA by chaining operations through a DSA connected to both networks.

HARDWARE PLATFORMS

[No information provided--Ed.]

SOFTWARE PLATFORMS

The ISODE and QUIPU runs on native Berkeley (4.2, 4.3) and AT&T System V, in addition to various other UNIX-like operating systems. No kernel modifications are required.

AVAILABILITY

The ISODE is not proprietary, but it is not in the public domain. This was necessary to include a "hold harmless" clause in the release. The upshot of all this is that anyone can get a copy of the release and do anything they want with it, but no one takes any responsibility whatsoever for any (mis)use.

DISTRIBUTION SITES

The FTP or FTAM distributions of ISODE-7.0 consists of 3 files. The source and main ISODE-7.0 distribution is in the file isode-7.tar.Z which is approximately 4.7MB in size.

LaTeX source for the entire document set can be found in the isode-7-doc.tar.Z file (3.5MB). A list of documents can be found in the doc/ directory of the source tree.

A Postscript version of the five volume manual can be found in the isode-7-ps.tar.Z file (4.7MB).

1. FTP
   If you can FTP to the Internet, then use anonymous FTP to uu.psi.com [136.161.128.3] to retrieve the files in BINARY mode from the isode/ directory.

2. NIFTP
   If you run NIFTP over the public X.25 or over JANET, and are registered in the NRS at Salford, you can use NIFTP with username "guest" and your own name as password, to access UK.AC.UCL.CS to retrieve the files from the <SRC> directory

3. FTAM on the JANET, IXI or PSS
   The sources are available by FTAM from UCL over X.25 using

```
JANET (DTE 00000511160013),
IXI   (DTE 20433450420113) or
PSS   (DTE 23421920030013)
```

all with TSEL "259" (ASCII encoding). Use the "anon" user-identity and retrieve the files from the src/ directory. The file service is provided by the FTAM implementation in ISODE 6.0 or later (IS FTAM).

4. NORTH AMERICA

For mailings in NORTH AMERICA, send a check for 375 US Dollars to:

University of Pennsylvania
Department of Computer and Information Science
Moore School
Attn: David J. Farber (ISODE Distribution)
200 South 33rd Street
Philadelphia, PA 19104-6314
US
+1 215 898 8560

Specify either (a) 1600bpi 1/2-inch tape, or (b) Sun 1/4-inch cartridge tape. The tape will be written in tar format and returned with a documentation set. Do not send tapes or envelopes. Documentation only is the same price.

5. EUROPE (tape and documentation)

For mailings in EUROPE, send a cheque or bankers draft and a purchase order for 200 Pounds Sterling to:

Department of Computer Science
Attn: Natalie May/Dawn Bailey
University College London
Gower Street
London, WC1E 6BT
UK

For information only:

Telephone:	+44 71 380 7214
Fax:	+44 71 387 1397
Telex:	28722
Internet:	natalie@cs.ucl.ac.uk, dawn@cs.ucl.ac.uk

Specify either (a) 1600bpi 1/2-inch tape, or (b) Sun 1/4-inch cartridge tape. The tape will be written in tar format and returned with a documentation set. Do not send tapes or envelopes. Documentation only is the same price.

7. EUROPE (tape only)

Tapes without hardcopy documentation can be obtained via the European Forum for Open Systems (EurOpen, formerly known as EUUG). The ISODE 7.0 distribution is called EurOpenD14.

EurOpen Software Distributions
c/o Frank Kuiper
Centrum voor Wiskunde en Informatica
Kruislaan 413
1098 SJ Amsterdam
The Netherlands

For information only:

Telephone:	+31 20 5924121 (or: +31 20 5929333)
Telex:	12571 mactr nl
Telefax:	+31 20 5924199
Internet:	euug-tapes@cwi.nl

Specify one of:

- 1600bpi 1/2-inch tape: 140 Dutch Guilders
- Sun 1/4-inch cartridge tape (QIC-24 format): 200 Dutch Guilders

If you require DHL this is possible and will be billed through. Note that if you are not a member of EurOpen, then there is an additional handling fee of 300 Dutch Guilders (please enclose a copy of your membership or contribution payment form when ordering). Do not send money, cheques, tapes or envelopes, you will be invoiced.

8. PACIFIC RIM

For mailings in the Pacific Rim, send a cheque for 300 dollars Australian to:

Isode Distribution
(Attn Andrew Waugh)
723 Swanston St,
Carlton, VIC 3053
Australia

For information only:

Telephone:	+61 3 282 2615
Fax:	+61 3 282 2600
Internet:	ajw@mel.dit.csiro.au

Please specify the media you desire: (a) 1/2-inch tape at 1600bpi, 3200bpi, or 6250bpi; or (b) Sun 1/4-inch cartridge tape in either QIC-11, QIC-24 or QIC-150 format; or (c) Exabyte 2.3 Gigabyte or 5 Gigabyte format. The tape will be written in tar format and returned with a documentation set. Do not send tapes or envelopes. Documentation only is the same price.

NAME

SD
Brunel University

LAST MODIFIED

November, 1991

KEYWORDS

DUA Only, Free, Included in ISODE, Multiple Vendor Platforms, Needs ISODE, RFC-1006, UNIX, X Window System

ABSTRACT

SD (Screen Directory) is an X.500 DUA interface for character mapped screens. SD is an early attempt to provide quick, easy and user friendly access to the Directory. The following directory operations are supported: read, search and list.

SD does not provide any sophisticated access to the DSA. Operations are performed synchronously. The Directory is thus presented as is, i.e. a hierarchical tree of information, with the user required to "navigate" the DIT in order to locate required information.

SD is available as part of the ISODE release from version 6.0 onwards.

COMPLETENESS

88 standard: strong authentication not implemented

INTEROPERABILITY

Believed to be compliant, though untested.

PILOT CONNECTIVITY

DUA Connectivity: SD is in use in many directory pilots, certainly including PARADISE and the Internet.

BUGS

Bugs to x500@brunel.ac.uk

INTERNETWORKING ENVIRONMENT

TP0 over TCP/IP (as ISODE)

HARDWARE PLATFORMS

Most UNIX machines

SOFTWARE PLATFORMS

UNIX
BSD curses library
ISODE/QUIPU libraries (version 6.7 upwards)

AVAILABILITY

Openly available as part of the ISODE release. Sources are freely available for commercial or non-commercial use from:

src.brunel.ac.uk [134.83.128.3]

Files are:

x500/pod.tar.Z
x500/sd.tar.Z

Contacts:

Andrew.Findlay@brunel.ac.uk +44 1 895 74000 x 2512
Damanjit.Mahl@brunel.ac.uk +44 1 895 74000 x 2946
x500@brunel.ac.uk

Postal Address:

Andrew Findlay
Computer Centre
Brunel University
Cleveland Road,
Uxbridge, Middlesex
UB8 3PH
United Kingdom

NAME

UCOM.X 500 (tm)
E3.X

LAST MODIFIED

November, 1991

KEYWORDS

API, Bull, Commercially Available, DEC Ultrix, DSA/DUA, HP, IBM PC, IBM RISC, Multiple Vendor Platforms, Philips, RFC-1006, Siemens, Sun, UNIX, X.25

ABSTRACT

UCOM.X 500 includes a Directory System Agent (DSA), a directory access API, and a set of Directory User Agents (DUAs) for different terminal types. UCOM.X 500 is a commercial product based on PIZARRO, the research prototype developed at INRIA by Christian Huitema's team.

Some characteristics of the DSA are:

- The DAP and DSP protocols are provided conformant with the 1988 CCITT X.500 recommendations.

- The DIB is maintained in ASN.1 encoded format in the Unix file system. Utilities are provided to load and dump the DIB from and to ASCII text files.

- The DIT structure is held in main memory. Additionally, frequently used attributes may be held in inverted tables in memory to speed up searches.

- Knowledge management: knowledge on managed domains is stored in UCOM.X specific attributes of the DSA entries.

- All X.500 (88) as well as some X.400 (88) object classes, attributes and syntaxes are supported. Users may define their own classes and attribute types.

- Schema management: object class and attribute definitions are enforced.

- Simple authentication is provided; strong authentication is not currently supported.

- Access control: private mechanisms are provided to allow access control lists to be specified for parts of the DIT, to control modifications, and to specify access restrictions on attributes.

The UCOM.X 500 API provides the DAP protocol to applications accessing the Directory. It is a synchronous API which automatically manages referrals. Several DUAs using the API, are available. These include command line and full screen interfaces for users with ordinary terminals, and an X-Windows user interface (12/91). An X/Open XDS API will be offered shortly.

UCOM.X 500 is used by French research centers involved in PARADISE, a COSINE project. A distributed application to control document transfer in a large French hospital, has been built on the UCOM.X 500 API. It is being used for distributed applications management in the French Post Office.

COMPLETENESS

UCOM.X 500 conforms to 1988 X.500 series of recommendations, as specified in paragraph 9 of X.519, with the exception of strong authentication.

INTEROPERABILITY

Interoperability tests with other implementations, e.g. QUIPU, have been made in the PARADISE project. UCOM.X 500 is used in the French PARADISE pilot.

PILOT CONNECTIVITY

DSA and DUA connectivity to the PARADISE pilots. See caveats.

BUGS

UCOM.X 500 is a commercial product. As such, it is supported and bugs are fixed when detected. Bug reports can be sent to our support team via electronic mail.

CAVEATS AND GENERAL LIMITATIONS

The DIT structure is stored in main memory which means that the order of magnitude of the number of objects supported per DSA is 10,000. By 1992 100,000 objects will be supported.

Not all syntaxes defined in the COSINE and Internet Schema are currently supported, and the DUAs do not display photo attributes. The Internet DSP is not supported.

INTERNETWORKING ENVIRONMENT

UCOM.X 500 uses RFC-1006 with TCP/IP and TP0 with X.25.

HARDWARE PLATFORMS

UCOM.X 500 runs on: Sun 3, Sun 4, IBM RS 6000, Philips P 9000, DEC machines, Bull DPX 2000, HP 9000/300, Siemens IN 6000 and 386-based PCs. It can easily be ported to any UNIX machine.

Windows 3 and Macintosh DUAs will be available by Spring 1992.

SOFTWARE PLATFORMS

UCOM.X 500 is portable to any UNIX-like operating system. It has been ported to: AIX, UNIX System V.3, SUN OS 4, Ultrix, HP-UX, SCO Unix, Interactive, BOS (Bull Operating System), and SPIX.

The UNIX file system is used to hold the DIB.

AVAILABILITY

UCOM.X is commercially available. Contact:

Dominique Fayet
E3.X
Tour Anjou
33 Quai de Dion Bouton
92 814 Puteaux CEDEX
FRANCE

Tel: (+33) 1 40 90 08 15
Fax: (+33) 1 47 74 58 87

Philippe Brun
C=fr;A=atlas;P=e3x;O=e3x;S=Brun
phb@e3x.fr

NAME

ud
University of Michigan

LAST MODIFIED

November, 1991

KEYWORDS

Available via FTP, DUA Light Weight Client, Free, Source, UNIX, Multiple Vendor Platforms

ABSTRACT

ud is a command line based directory application useful for displaying and modifying white pages information about people. It runs on top of the DIXIE protocol (described in RFC 1246). ud was developed to run under Unix and is currently in beta release within U-M staff and a few other places that have heard of it.

Features include the ability to display and modify the following attributes: title, description, commonName, uid, mail, postalAddress, homePostalAddress, telephoneNumber, facsimileTelephoneNumber, homePhone.

COMPLETENESS

ud uses the DIXIE protocol to access X.500 and thus is subject to the same completeness restrictions as DIXIE. It provides Read, Search, and Modify capabilities.

INTEROPERABILITY

Works with the DIXIE server, which works with the QUIPU DSA and DAP library.

PILOT CONNECTIVITY

It has been tested (in conjunction with the DIXIE server) in both the Internet and PARADISE pilots.

BUGS

No outstanding bugs are known. But reports should be sent to x500@itd.umich.edu.

CAVEATS AND GENERAL LIMITATIONS

ud is heavily oriented to white pages information and thus general access to the DIXIE protocol is not provided.

INTERNETWORKING ENVIRONMENT

ud uses the DIXIE protocol and thus TCP to communicate with the DIXIE server.

HARDWARE PLATFORMS

ud is known to run on Sun 3s, Sun 4s, and Vaxen.

SOFTWARE PLATFORMS

SunOS 3.5, SunOS 4.1.1, BSD 4.3 Unix.

AVAILABILITY

This software is openly available. It may be obtained by anonymous FTP from terminator.cc.umich.edu in the directory ~ftp/x500.

This software was developed at the University of Michigan by Bryan Beecher of the ITD Research Systems Unix Group and is subject to the following copyright.

NAME

VMS-ISODE
Computer Science Department of Massey University

LAST MODIFIED

November, 1991

KEYWORDS

API, Available via FTP, DSA/DUA, Free, Needs ISODE, RFC-1006, Source, VMS

ABSTRACT

VMS-ISODE is a reasonably complete port of ISODE version 7.0. It sits on top of several TCP implementations for VMS (UCX, Multinet, CMU and Wollongong) and also PSI X.25.

See entry for QUIPU/ISODE for a detailed description of the DSA/DUA.

COMPLETENESS

See entry for QUIPU/ISODE.

INTEROPERABILITY

See entry for QUIPU/ISODE.

PILOT CONNECTIVITY

Not tested.

BUGS

VMS related problems should be sent to PKay@massey.ac.nz

CAVEATS AND GENERAL LIMITATIONS

None.

INTERNETWORKING ENVIRONMENT

See entry for QUIPU/ISODE.

HARDWARE PLATFORMS

VAX hardware

SOFTWARE PLATFORMS

VMS v5.0 or greater

AVAILABILITY

The VMS part of the package is freely available. Anonymous FTP from cc-vms1.massey.ac.nz (130.123.1.4).

NAME

VTT X.500
Technical Research Centre of Finland

LAST MODIFIED

November, 1991

KEYWORDS

API, Apollo, CLNP, Commercially Available, DSA/DUA, IBM PC, Multiple Vendor Platforms, RFC-1006, Sun, X.25

ABSTRACT

VTT X.500 contains a full distributed DSA and a subroutine call to dua (call_dua(parameters)). This subroutine is linked to user's process. There are two ways for dua to communicate with our DSA called dsacvops: a fast communication through shared memory for dua and dsa in the same computer and a complete OSI-stack for communicating in DAP-protocol with remote dsa's which can be any implementation of X.500 dsa, not necessarily dsacvops. DSA communicates with other dsas through a full OSI-stack with protocol DSP or with a shorter stack when both dsas are dsacvops-processes. dsacvops contains a special purpose database DIB. VTT X500 contains caching of read and search results, access controls (as in Annex F of X.501), object classes and attribute types as in X.520 and X.521 and simple authentication with unprotected passwords in bind. The network level can be X.25 or TCP/IP. There are test duas, duacvops, duauser, with a simple user interface. Certificates for strong authentication are included to x509dua and x509duacvops. VTT X500 is realized with program development tools CVOPS and CASN, the code is in C-language and uses UNIX System V. The code is fairly easy to port to other operating systems. VTT X500 was made for Smail e-mail product of Nokia Data Systems.

COMPLETENESS

Complete DAP and DSP of 1988 X.500 Recommendations are implemented. There are the following omissions: multicasting is not implemented, strong authentication of calls to dsa (optional signing of DAP and DSP-calls, strong authentication in bind, security error, security parameters in common arguments), T61 alternative in CASE IGNORE and CASE EXACT STRING, Criteria-syntax, TeletexTerminalIdentifier syntax.

INTEROPERABILITY

Interoperability with ISODE QUIPU 6.0 has been tested, no formal test suite was used.

PILOT CONNECTIVITY

Not tested: It should work in principle, but has not been tested.

BUGS

No known bugs at the moment.

CAVEATS AND GENERAL LIMITATIONS

Object identifiers for object classes and attribute types can currently have only the form {2 5 6 x} or {2 5 4 x}, x<256. Changing the directory schema requires code writing.

INTERWORKING ENVIRONMENT

RFC-1006 with TCP/IP, TP0 with X.25, TP4 with X.25 available by agreement.

HARDWARE PLATFORMS

Sun-3, Sun 386, Apollo, a version of dua for IBM PC will be forthcoming 1991.

SOFTWARE PLATFORMS

Unix System V. Our own database and database management system. Uses CVOPS protocol development tool.

AVAILABILITY

Commercially available. Contact

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NAME

WIN(tm)/DS
The Wollongong Group, Inc.

LAST MODIFIED

November, 1991

KEYWORDS

API, CLNP, Commercially Available, DSA/DUA, Multiple Vendor Platforms, OSI Transport, RFC-1006, Source, UNIX, X Windows, X.25

ABSTRACT

WIN/DS is an implementation of OSI Directory Services aligned with the ISO 1988 X.500 IS and NIST Stable Implementors Agreements. WIN/DS includes both a Directory User Agent (DUA) and a Directory System Agent (DSA). The product supports all Directory Services operations, object classes and attributes. It provides support for managing the Directory Information Tree (DIT) with facilities to control structure rules and their enforcement. WIN/DS also provides solutions to areas not specified by the 1988 standards, such as replication and access control.

COMPLETENESS

Wollongong closely follows the NIST OIW Stable Implementors' Agreements. See also QUIPU.

INTEROPERABILITY

WIN/DS has interoperated with other X.500 implementations at trade shows (CeBIT and Interop) and at strategic customer sites.

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

Requests for product enhancement and modification should be sent to support@twg.com.

CAVEATS AND GENERAL LIMITATIONS

[No information provided--Ed.]

INTERNETWORKING ENVIRONMENT

TCP/IP (RFC 1006)
TP0
TP2
TP4
OSI TP[0/2,4] & TCP/IP dual stack gateway
Ethernet
X.25
Ethernet/X.25 gateway
ES-IS
IS-IS
Interface to OSI transport via the TLI
Interface to the Data Link Layer via the DLPI
STREAMS and DLPI compliant 3rd party network interfaces

HARDWARE PLATFORMS

End-user binary product -

386/i486 with UNIX System V (AT&T, Intel, INTERACTIVE, SCO)
Apple Macintosh with A/UX

Portable source code -

UNIX SVR3, SVR4, BSD
single- or mutli-processor 680x0, 880000, 386/i486

SOFTWARE PLATFORMS

See above.

AVAILABILITY

WIN/DS is commercially available from:

The Wollongong Group, Inc.
1129 San Antonio Road
Palo Alto
CA 94303
Sales and Information: :415/962-7100 California
703/847-4500 Wash D
+32-2-718-0311 Belgium

NAME

X.500 DUA process
3Com Corporation

LAST MODIFIED

July, 1991

KEYWORDS

CLNP, Commercially Available, DUA Only, Multiple Vendor Platforms, X Window System, X.25, 3Com

ABSTRACT

The DUA process runs on 3Com's dual-stack OSI/TCP terminal server, scheduled to be released in mid-June 1991. It provides Presentation Address resolution for names, on behalf of the VTP application: when the user attempts an outgoing connection ("VTP <name>" or "connect <name>"), <name> gets mapped to its Presentation Address.

The DUA process supports the AddEntry, RemoveEntry, and Search operations. Via a menu-driven command, the system administrator can configure any of these operations, then send the request to the DSA. He would use the AddEntry operation to enter a resource name and its corresponding physical address in the DIB, the DeleteEntry operation to remove the name and its physical address, and the Search operation (with "filter" as an option) for a display of all registered names or, given a name, a display of the name's physical address.

Regarding unbinding from a DSA, the system administrator could use an UnbindDSA command or set a timer which, once expired, would automatically perform the unbinding. The binding to a DSA, on the other hand, is transparent, provided the system administrator has set a DSA address. The binding is triggered by either an outgoing connection attempt or an operation request sent to the DSA.

The schema supported by the DUA consists of the following sequence of object classes: Country, Organization, OrganizationalUnit (up to 3 levels of OrganizationalUnits are allowed), ApplicationProcess, and ApplicationEntity. Their respective attributes are CountryName, OrganizationName, OrganizationUnitName, CommonName, and PresentationAddress. The CommonName of the ApplicationEntity is always "vt" for VTP and is transparent to the system administrator.

COMPLETENESS

Compliance with the ISO/IEC 9594 standards.
Handling referrals not yet implemented.
Schema supported: Country, Organization, OrganizationalUnit, ApplicationProcess, and ApplicationEntity.
Authentication not supported.

INTEROPERABILITY

Interoperability with the ISODE QUIPU Directory Service and any DSA which strictly meets the ISO/IEC 9495 standards.

BUGS

[No information provided--Ed.]

CAVEATS AND GENERAL LIMITATIONS

Deleting an entry will fail if the DUA is interacting with a 6.0 based version of QUIPU. This is a bug in QUIPU, and version 7.0 release will have it fixed.

Adding a CountryName is disallowed if the DUA is bound to QUIPU. This decision was made because to add a country in QUIPU, one needs to bind as the manager of the DSA holding the root EDB file, and such information may not always be available to the system administrator. Also, our binding is done transparently.

INTERNETWORKING ENVIRONMENT

OSI environments with the complete OSI stack, supporting CLNS and TP4.

HARDWARE PLATFORMS

3Com’s OSI/TCP CS/2000 and CS/2100.

SOFTWARE PLATFORMS

The "SW/2000-OT Vers 1.0" software runs on 3Com’s OSI/TCP CS/2000 and CS/2100, both stand-alone systems.

AVAILABILITY

The dual-stack OSI/TCP terminal server and its "SW/2000-OT Vers 1.0" software is available from:

3Com Corporation
5400 Bayfront Plaza
Santa Clara, CA 95054

Information: Cyndi Jung
(408) 764-5173
cmj@3Com.COM

NAME

Xdi
Bellcore

LAST MODIFIED

November, 1991

KEYWORDS

DUA Only, DUA Connectivity, Available via FTP, Free, Source, Needs ISODE, X Window System, RFC-1006, CLNP, UNIX, X.25

ABSTRACT

Xdi is a Directory User Agent (DUA) for the X Window System. In addition to providing a user-friendly interface,it supports Directory interactions of different levels of complexity. Users can select different window screens to browse, search and modify the Directory. There are two different search screens for name based search and attribute based search. It is simple to use for novice users but is also useful for more advanced users to formulate complex search filters. Xdi also supports "user-friendly naming" in many cases so that users are not required to know X.500 naming format.

COMPLETENESS

The Xdi interface does not support accesses to Delete and Add DAP operations as in the 88 Directory Standard. Read, Search, and most Modify operations are fully supported. There are no facilities to modify the RDNs of entries. Strong authentication is not implemented.

INTEROPERABILITY

Believed to be compliant. Only tested against ISODE/QUIPU DSAs.

PILOT CONNECTIVITY

DUA Connectivity

BUGS

Send bug reports to sywuu@thumper.bellcore.com

CAVEATS AND GENERAL LIMITATIONS

None known.

INTERNETWORKING ENVIRONMENT

Same as ISODE.

HARDWARE PLATFORMS

This software has been tested on SUN4. It is expected that the software is portable to SUN3 and other UNIX machines.

SOFTWARE PLATFORMS

Xdi is expected to run on ISODE (release 6.8 upwards) in UNIX environment. The 'xdi' directory has been designed to fit directly into the ISODE source tree. Xdi requires X11R4, the associated Xt toolkit and Athena widget libraries. Also see the operating environments of ISODE.

AVAILABILITY

The Xdi software is available via anonymous FTP from thumper.bellcore.com in file pub/xdi.tar.Z. Source code and executables can be freely distributed or modified for non-commercial and non-profit use provided that all copyright notices, permission and nonwarranty notice included in the software distribution remain intact.

For further information contactSze-Ying Wuu at sywuu@thumper.bellcore.com.

NAME

Xds
CSIRO Division of Information Technology

LAST MODIFIED

November, 1991

KEYWORDS

Dua only, Free, Limited Functionality, Needs ISODE, RFC-1006, Source, Sun, X-Windows

ABSTRACT

Xds is a DUA designed for users who have little or no knowledge of X.500. Its intended to be used, for example, by a receptionist who has to answer such queries as 'Could I have the telephone number of Andrew who works in Research?'. The display is customized for the particular organization and the results of the search are presented in the format of a business card. It is possible to customize the displayed information.

COMPLETENESS

Xds does not provide user access to all the services provided by X.500. Instead, Xds uses X.500 services to provide the specific functions for which it is designed to provide.

Conforms to section 9 of X.519.

INTEROPERABILITY

Only tested against the QUIPU (ISODE) DSA.

No known bugs, but we would be interested in any found. Contact Andrew Waugh (ajw@mel.dit.csiro.au)

PILOT CONNECTIVITY

Not tested.

BUGS

No known bugs, but we would be interested in any found. Contact Andrew Waugh (ajw@mel.dit.csiro.au)

CAVEATS AND GENERAL LIMITATIONS

The user can only bind as the anonymous user.

INTERNETWORKING ENVIRONMENT

Uses the QUIPU (ISODE 7.0) libraries.

HARDWARE PLATFORMS

Xds runs on Sun SPARCstations. We have not tested Xds on other hardware platforms, but it should run on other hardware which supports ISODE-7.0 and X Windows.

SOFTWARE PLATFORMS

Xds requires ISODE-7.0 and X 11 Version 4 with the Athena Widgets.

AVAILABILITY

The Xds software will be distributed free to any non-commercial site provided

i) they do not pass the code on to any other site (rather they should ask the other site to contact us directly).

ii) they do not make money out of from the use or sale of the software.

iii) they inform us of any problems or possible improvements that they would like to see made.

Commercial sites should contact us.

For further information contact:

Andrew Waugh
CSIRO Division of Information Technology
723 Swanston St
Carlton VIC 3053
AUSTRALIA

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NAME

xdua
CSIRO Division of Information Technology

LAST MODIFIED

November, 1991

KEYWORDS

DUA Only, Free, Multiple Vendor Platforms, Needs ISODE, source, Sun, X Window System

ABSTRACT

The xdua is a DUA designed to be used by DSA managers who have sufficient X.500 knowledge to manipulate the Directory Information Tree (DIT). It's typical use is to maintain the information stored on a DSA. The xdua has a Macintosh style interface. This simplifies browsing the DIT hierarchy. A user can traverse the DIT levels by using a standard mouse. The xdua supports the X.500 operations of add, modify, delete, search and show.

COMPLETENESS

Uses the QUIPU (ISODE) dsap interface to provide the X.500 operations.

Conforms to section 9 of X.519.

INTEROPERABILITY

Only tested against the QUIPU (ISODE) DSA.

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

No known bugs, but we would be interested in any found. Contact Brian May (Brian.May@mel.dit.csiro.au)

CAVEATS AND GENERAL LIMITATIONS

The executable code is large as it uses the X11R4 and DiSh libraries. The xdua is in the testing phase.

INTERNETWORKING ENVIRONMENT

As supported by ISODE.

HARDWARE PLATFORMS

The xdua runs on Sun SPARCstations and probably on other hardware which supports ISODE-7.0 and X Windows.

SOFTWARE PLATFORMS

The xdua requires ISODE-7.0 and X 11 Version 4 with the Athena Widgets and the Xt toolkit.

AVAILABILITY

We will distribute it free to any non-commercial site provided

i) they do not pass the code on to any other site (rather they should ask the other site to contact us directly).

ii) they do not make money out of from the use or sale of the software.

iii) they inform us of any problems or possible improvements that they would like to see made.

Commercial sites should contact us directly. For further information contact:

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NAME

XLU
Brunel University

LAST MODIFIED

November, 1991

KEYWORDS

Available via FTAM, Available via FTP, DUA Only, Free, Multiple Vendor Platforms, Needs ISODE, RFC-1006, Source, UNIX

ABSTRACT

XLU (X LookUp) is an X.500 DUA interface for the X Window System. Developed from POD, XLU can be configured for many different styles of interaction. Example configurations are provided for single window and multiple window (POD-like) use.

XLU implements the ‘User-Friendly Naming’ search strategy and also has a form-filling search mode. Asynchronous directory operations are used.

Full add and modify functions are provided, with the ability to tailor the modify screen to present simple subsets of the available attribute.

At the time of writing (October 1991) XLU was in beta test.

COMPLETENESS

88 standard: strong authentication not implemented.

INTEROPERABILITY

Believed to be compliant, though untested.

PILOT CONNECTIVITY

DUA Connectivity: In use at Brunel and some other sites in the UK and PARADISE pilots.

BUGS

Bugs to x500@brunel.ac.uk.

CAVEATS AND GENERAL LIMITATIONS

[No information provided--Ed.]

INTERNETWORKING ENVIRONMENT

TP0 over TCP/IP (and others as ISODE).

HARDWARE PLATFORMS

Most UNIX machines.

SOFTWARE PLATFORMS

UNIX
MIT X libraries (release 11 version 4)
ISODE/QUIPU libraries (version 7.0 upwards)

AVAILABILITY

Sources are freely available for commercial or non-commercial use.
Contacts:

Andrew.Findlay@brunel.ac.uk +44 1 895 274000 x 2512
Damanjit.Mahl@brunel.ac.uk +44 1 895 274000 x 2946
x500@brunel.ac.uk

Postal Address:

Andrew Findlay
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Brunel University
Cleveland Road,
Uxbridge, Middlesex
UB8 3PH
United Kingdom

Anonymous FTP:

src.brunel.ac.uk
x500/xlu.tar.Z

NAME

XT-DUA
X-Tel Services Limited

LAST MODIFIED

November, 1991

KEYWORDS

DUA Only, Multiple Vendor Platforms, Needs ISODE-7.0, RFC-1006 X Window System, CLNP, X.25, OSI Transport, Sun, Unix, Commercially Available.

ABSTRACT

XT-DUA provides a X-Windows based user interface to the X.500 directory. Both Motif and OpenLook styles are supported.

XT-DUA is available in two forms:

as a browsing tool
as a management tool

Browsing features include:

- History - allowing quick access to previously referenced parts of the DIT.

- Customizable entry display - allowing subsets of attributes be displayed when showing an entry.

- User Friendly Name (UFN) based searching

- Hypertext-like navigation.

- Support for applicationEntities eg startup of ftam session.

- User friendly name for attributes.

- Support for photo and audio attributes.

- Attribute value on scanline.

- Intelligent choice of entries to display when moving to a new location in the DIT.

Management features include:

- Creation of new entries.

- Modification of existing entries (including RDN) - based on Quipu EDB format.

- Deletion of entries.

- Friendly editor of modifying Quipu ACLs.

- Rebinding - authenticated and to named DSA.

- Full configuration of DAP request parameters

COMPLETENESS

XT-DUA provides access to all the X.500 DAP operations. Protocol completeness is as for QUIPU-7.0.

INTEROPERABILITY

As for the QUIPU-7.0.

PILOT CONNECTIVITY

Full DUA Connectivity to the X.500 Pilot.

BUGS

No known bugs.

CAVEATS AND GENERAL LIMITATIONS

None.

INTERNETWORKING ENVIRONMENT

As for the QUIPU-7.0.

HARDWARE PLATFORMS

As for the QUIPU-7.0.

SOFTWARE PLATFORMS

As for the QUIPU-7.0, with the addition of X Windows and either Motif or Open Look.

AVAILABILITY

XT-DUA is commercial software. It is available via ftp. For more details contact:

Colin Robbins or Graeme Lunt
X-Tel Services Limited
University Park
Nottingham
NG7 2RD

DN: c=GB@o=X-Tel Services Ltd
Telephone: +44 602 412648
Fax: +44 602 790278
E-Mail: x500@xtel.co.uk

NAME

xwp
Performance Systems International Inc.

LAST MODIFIED

July, 1991

KEYWORDS

Commercially Available, DUA Only, Limited Functionality, Multiple Vendor Platforms, UNIX, X Window System

ABSTRACT

xwp is a graphical user interface tailored specifically to provide easy access to the Directory for the purposes of performing White Pages searches. It is currently in use as one of user interfaces available on wp1.psi.net and wp2.psi.net, the two service machines for the White Pages Pilot Project. Implements User-Friendly Naming scheme developed in IETF OSI-DS Working Group.

COMPLETENESS

Compliant with X.500 standards to the extent that the QUIPU implementation is.

INTEROPERABILITY

Successfully interoperates with QUIPU DSAs.

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

Bugs to ssd-help@psi.com

CAVEATS AND GENERAL LIMITATIONS

xwp is not a general-purpose DUA. It was designed to be a special-purpose front-end for performing White Pages searches and thus, in the interests of simplification, does not provide the full range of functionality supported by the X.500 standard.

INTERNETWORKING ENVIRONMENT

Runs in a BSD UNIX environment supporting the X Windows System.

HARDWARE PLATFORMS

Should be capable of running in any BSD UNIX environment that supports the X Windows system. No special hardware required beyond that required to support X Windows, BSD UNIX and the ISODE.

SOFTWARE PLATFORMS

Tested under SUNOS 3.x and 4.x; should run under most variants of BSD UNIX. Requires X Windows Release 3 or later.

AVAILABILITY

xwp is a commercial product that may be licensed from PSI Inc. as part of PSI's Software Source Distribution (SSD). Email to

ssd-info@psi.co

will elicit an automatic response containing information on the SSD. Ordering information may be obtained by sending electronic mail to

ssd-order@psi.com

or contacting PSI at

Performance Systems International Inc.
11800 Sunrise Valley Drive
Suite 1100
Reston, Virginia 22091.

1.703.620.6651
1.800.82PSI82 (1.800.827.7482)
1.703.620.4586 (fax)

NAME

xwp
University of Wisconsin

LAST MODIFIED

July, 1991

KEYWORDS

Free, IBM PC, Multiple Vendor Platforms, Needs ISODE, UNIX, X Window System

ABSTRACT

The xwp program is a simple browser for the QUIPU/X.500 directory. It uses OSF/Motif and the X Window System to provide a convenient user interface.

The user interface consists of five different top-level windows: the main window, the search window, and three option windows. The main window appears when the program is executed and all others are reached through its menus. The main window contains Current Location, Current Descendents, Descendent Filter, Current Information, and Directory Status subwindows. The contents of these subwindows show information about the current location of the browser in the directory tree. The search window contains Search Area, Search Filter, and Search Results subwindows.

The mouse pointer may be used in the main window to change the current location of the browser in the directory tree. We can descend deeper into the tree by clicking the mouse when it points to a member of the Current Descendents list. Doing this "moves" the browser to this new (one level deeper) location in the directory tree. This causes the main window to be updated as follows: (1) the selected descendent becomes the new Current Location, (2) its descendents are listed in Current Descendents, and (3) its contents are displayed in Current Information. Any problems and messages from the directory are displayed in the Directory Status portion of the main window. To move the browser up the directory tree (i.e. towards the root), click the mouse pointer on one of the components of the Current Location. In this way it is possible to move the browser to any location above its current position (i.e. to any ancestor) in one mouse click. Doing this causes the main window to be updated as discussed above. Due to directory-imposed limits, it may not always be possible to display all the descendents of the current position. In such cases (and others) it may be useful to impose a filter on the

descendents to be listed. To do this, position the mouse pointer in the Descendent Filter box and use the keyboard to type in the desired filter expression. Typing <RETURN> in this box causes the Current Descendents list to be updated using the new filter.

xwp was developed at the University of Wisconsin - Madison Computer Sciences Department. It is used in conjunction with the ECI mail user agent project. xwp was written by Robert Lazarus, III.

COMPLETENESS

n/a

INTEROPERABILITY

xwp currently operates with ISODE version 6.0

PILOT CONNECTIVITY

[No information provided--Ed.]

BUGS

xwp should be upgraded to the latest version of ISODE/QUIPU.

CAVEATS AND GENERAL LIMITATIONS

n/a

INTERNETWORKING ENVIRONMENT

xwp will operate in any environment where Motif, ISODE and QUIPU operate.

HARDWARE PLATFORMS

xwp has been run on IBM PC/RT, soon to run on DecStation 3100.

SOFTWARE PLATFORMS

Berkeley 4.3 and Ultrix 3.1

AVAILABILITY

Openly available in May, 1991. Contact hagens@cs.wisc.edu for more information.

4. References

[CCITT-88] CCITT, "Data Communications Networks Directory," Recommendations X.500-X.521, Volume VIII - Fascicle VIII.8, IXth Plenary Assembly, Melbourne, November 1988.

[NIST-88] National Institute of Standards and Technology, "Stable Implementation Agreements for Open Systems Interconnection Protocols," Version 2 Edition 1, NIST Special Publication 500-162, December 1988.

5. Security Considerations

Security issues are not discussed in this memo.

6. Authors' Addresses

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