Network Working Group
INTERNET–DRAFT

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Directory Requirements for COSINE and Internet Pilots (OSI-DS 18)

Status of this Memo

This document specifies operational requirements for DUAs and DSAs in the Internet and COSINE communities. This document summarises conformance requirements. In most cases, technical detail is handled by reference to other documents. This document refers to core directory infrastructure. Each application using the directory may impose additional requirements.

If the need for this document is established, this draft document will be submitted to the RFC editor as a protocol specification. Distribution of this memo is unlimited. Please send comments to the author or to the discussion group <osi-ds@CS.UCL.AC.UK>.

1 General

The following documents are relevant to this requirements specification. It is assumed that Internet Drafts will be RFCs by the time that this document is an RFC. Each document is given a keyword, which is used to refer to it in the text. These will be replaced by RFC references in the final document.

X.500 The OSI Directory is defined in [CCI88].

Overview The technical framework for the remainder of the documents is given ins [Kil90a].

Schema The COSINE and Internet X.500 Schema is defined in [BK91a].

Naming Guidelines Naming guidelines are given in [BK91b].

Extensions A number of extensions to the OSI Directory, relating to distributed operations and replication are defined in [Kil91c].

DSA Naming An approach to DSA Naming is defined in [Kil91a].

NSAP Approach An approach to handling network addresses is defined in [Kil89a].

RFC 1006 The mapping of COTS onto TCP/IP is defined in RFC 1006 [RC87].

PSAP String A string representation of presentation addresses is defined in [Kil89b].

UFN A string representation of directory names is defined in [Kil90b].

QOS A definition of Quality of Service is defined in [Kil91b].

Security Need something on security guidelines.

A number of lower layer options are possible to provide COTS. These are:

CONS TP0–TP4 over CONS

CLNS TP4 over CLNS

RFC 1006 RFC 1006 used to provide COTS over TCP/IP

X.25 TP0 over X.25(80) or X.25(84) without use of extended addressing to provide CONS.

The first three are global services. Where X.25 is used without qualification, use of the international X.25 services is implied. If IXI is used, this is referred to as X.25/IXI.

In the case of RFC 1006 and X.25, network addresses shall be represented according to (NSAP Approach).

2 DIT Conformance

This section refers to that portion of the DIT which is managed by systems which claim conformance to this specification.

All non-leaf entries shall be labelled with data quality as defined in (QOS), unless the data quality is correctly described by a QOS attribute higher in the DIT.

All entries shall conform to X.500 schema requirements. All entries shall conform to (Schema), with the following exceptions:

- Any parts of the tree where the data is marked as "experimental".
- Attributes and object classes not defined in (Schema) may be present in an entry, provided that the object has a structural object class defined in (Schema).

3 DUA Conformance

3.1 DSA Access

A DUA may operate over any lower layer stack. Each conforming DUA shall have a service agreement with at least one DSA. At least two DSAs is recommended.

It is recommended that DUAs access DSAs using X.500 DAP over COTS, based on CLNS, CONS, RFC 1006, or X.25. Support of DAP and multiple means to support COTS will maximise potential use of DSA referral.

DUAs may access DSAs by private (local) protocols.

3.2 Distributed Operation

DUAs may optimise their performance based on (Extensions).

DUAs may optimise their performance based on (QOS).

3.3 Presentation of Information

The DUA shall provide an option to present Distinguish Names as defined in (UFN).

It is recommended that support be given for the search algorithms following or based on those described in (UFN).

If presentation addresses are displayed, the syntax defined in (PSAP String) shall be used.

DSA Names and addresses should not usually be displayed to users.

4 DSA Conformance

4.1 Protocol

DSAs shall support DAP and DSP as defined in X.500. DSAs shall support Internet DSP as defined in (Extensions).

4.2 Lower Layers

There will be use of different lower layers in different pilots. In order to provide a single global directory, it is important that there is sufficient commonality, and "relay DSAs" to provide a single global directory. All participants need to work towards this.

A pilot is synonymous with a DMD. A DMD (pilot) is self declared. An example pilot is the UK Academic community pilot. The lower layer policy within a pilot is the concern of that pilot.

There is an Internet Pilot, represented by FOX. DSAs within this DMD shall support RFC 1006, and are recommended to support CLNS.

Every pilot, including the Internet Pilot, must provide connectivity to the following lower layers. Where a lower layer is not required on all DSAs in

the pilot, relay DSAs shall be provided to give the required connectivity.

X.25 Required for all pilots (this is expected to become optional when CONS is widely available)

RFC 1006 Required for all pilots

X.25/IXI Recommended for all pilots (this is expected to become optional when CONS is widely available)

CONS Recommended for all pilots (this is expected to be mandatory later)

CLNS Recommended for all pilots (this is expected to be mandatory later)

4.3 DSA Naming

To facilitate management, DSAs shall be named as defined in (DSA Naming).

4.4 Schema

DSAs shall allow any data which conforms to (Schema) to be stored.

References

[BK91a] P. Barker and S.E. Kille. The COSINE and Internet X.500 schema, March 1991.

[BK91b] P. Barker and S.E. Kille. Handling qos (quality of service) in the directory, March 1991. Internet Draft: draft-ietf-osids-dirpilots-00.txt,.ps.

[CCI88] The Directory — overview of concepts, models and services, December 1988. CCITT X.500 Series Recommendations.

[Kil89a] S.E. Kille. An interim approach to use of network addresses. Research Note RN/89/13, Department of Computer Science, University College London, February 1989. Internet Draft: draft-ucl-kille-networkaddresses-02.txt, ps.

[Kil89b] S.E. Kille. A string encoding of presentation address. Research Note RN/89/14, Department of Computer Science, University College London, February 1989. Internet Draft: draft-ucl-kille-presentationaddress-01.txt, ps.

[Kil90a] S.E. Kille. Building and internet directory using X.500, November 1990. Internet Draft: draft-ietf-osix500-directories-01.txt.

[Kil90b] S.E. Kille. Using the OSI directory to achieve user friendly naming. Research Note RN/90/29, Department of Computer Science, University College London, February 1990.

[Kil91a] S.E. Kille. Dsa naming, March 1991. Internet Draft: draft-ietf-osids-dsanaming-00.txt,.ps.

[Kil91b] S.E. Kille. Handling qos (quality of service) in the directory, March 1991. Internet Draft: draft-ietf-osids-qos-00.txt,.ps.

[Kil91c] S.E. Kille. Replication and distributed operations extensions to provide an internet directory using X.500, January 1991. Internet Draft: draft-ietf-osids-replsoln-02.txt, ps.

[RC87] Marshall T. Rose and Dwight E. Cass. ISO Transport Services on top of the TCP. Request for Comments 1006, DDN Network Information Center, SRI International, May 1987.

5 Security Considerations

Security considerations are not discussed in this INTERNET–DRAFT .

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