

ASN.1 Module Definition for the  
LDAP and X.500 Component Matching Rules

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

Copyright Notice

Copyright (C) The Internet Society (2004). All Rights Reserved.

Abstract

This document updates the specification of the component matching rules for Lightweight Directory Access Protocol (LDAP) and X.500 directories (RFC3687) by collecting the Abstract Syntax Notation One (ASN.1) definitions of the component matching rules into an appropriately identified ASN.1 module so that other specifications may reference the component matching rule definitions from within their own ASN.1 modules.

1. Introduction

The structure or data type of data held in an attribute of a Lightweight Directory Access Protocol (LDAP) [LDAP] or X.500 [X500] directory is described by the attribute's syntax. Attribute syntaxes range from simple data types, such as text string, integer, or boolean, to complex data types, for example, the syntaxes of the directory schema operational attributes. RFC 3687 [CMR] defines a generic way of matching user selected components in a directory attribute value of any arbitrarily complex attribute syntax.

This document updates RFC 3687 by collecting the Abstract Syntax Notation One (ASN.1) [ASN1] definitions of RFC 3687 into an appropriately identified ASN.1 module so that other specifications may reference these definitions from within their own ASN.1 modules.

## 2. Module Definition for Component Matching

```
ComponentMatching
  {iso(1) 2 36 79672281 xed(3) module(0) component-matching(4)}

-- Copyright (C) The Internet Society (2004).  This version of
-- this ASN.1 module is part of RFC 3727; see the RFC itself
-- for full legal notices.

DEFINITIONS
EXPLICIT TAGS
EXTENSIBILITY IMPLIED ::= BEGIN

IMPORTS
  MATCHING-RULE,
  RelativeDistinguishedName
    FROM InformationFramework
    {joint-iso-itu-t ds(5) module(1)
      informationFramework(1) 4} ;

ComponentAssertion ::= SEQUENCE {
  component          ComponentReference (SIZE(1..MAX)) OPTIONAL,
  useDefaultValues   BOOLEAN DEFAULT TRUE,
  rule               MATCHING-RULE.&id,
  value              MATCHING-RULE.&AssertionType }

ComponentReference ::= UTF8String

ComponentFilter ::= CHOICE {
  item  [0] ComponentAssertion,
  and   [1] SEQUENCE OF ComponentFilter,
  or    [2] SEQUENCE OF ComponentFilter,
  not   [3] ComponentFilter }

componentFilterMatch MATCHING-RULE ::= {
  SYNTAX  ComponentFilter
  ID      { 1 2 36 79672281 1 13 2 } }

allComponentsMatch MATCHING-RULE ::= {
  ID      { 1 2 36 79672281 1 13 6 } }

directoryComponentsMatch MATCHING-RULE ::= {
  ID      { 1 2 36 79672281 1 13 7 } }

-- Additional Useful Matching Rules --

rdnMatch MATCHING-RULE ::= {
```

```
SYNTAX RelativeDistinguishedName
ID      { 1 2 36 79672281 1 13 3 } }

presentMatch MATCHING-RULE ::= {
  SYNTAX NULL
  ID      { 1 2 36 79672281 1 13 5 } }

END
```

The InformationFramework ASN.1 module from which the MATCHING-RULE and RelativeDistinguishedName definitions are imported is defined in X.501 [X501].

The object identifiers used in this document have been assigned for use in specifying the component matching rules by Adacel Technologies, under an arc assigned to Adacel by Standards Australia.

### 3. Security Considerations

This document collects together the ASN.1 definitions of the component matching rules into an ASN.1 module, but does not modify those definitions in any way. See RFC 3687 [CMR] for the security considerations of using the component matching rules.

### 4. References

#### 4.1. Normative References

- [CMR] Legg, S., "Lightweight Directory Access Protocol (LDAP) and X.500 Component Matching Rules", RFC 3687, February 2004.
- [X501] ITU-T Recommendation X.501 (1993) | ISO/IEC 9594-2:1994, Information Technology - Open Systems Interconnection - The Directory: Models
- [ASN1] ITU-T Recommendation X.680 (07/02) | ISO/IEC 8824-1:2002, Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation

#### 4.2. Informative References

- [LDAP] Hodges, J. and R. Morgan, "Lightweight Directory Access Protocol (v3): Technical Specification", RFC 3377, September 2002.
- [X500] ITU-T Recommendation X.500 (1993) | ISO/IEC 9594-1:1994, Information Technology - Open Systems Interconnection - The Directory: Overview of concepts, models and services

## 5. Author's Address

Steven Legg  
Adacel Technologies Ltd.  
250 Bay Street  
Brighton, Victoria 3186  
AUSTRALIA

Phone: +61 3 8530 7710  
Fax: +61 3 8530 7888  
EMail: [steven.legg@adacel.com.au](mailto:steven.legg@adacel.com.au)

## 6. Full Copyright Statement

Copyright (C) The Internet Society (2004). This document is subject to the rights, licenses and restrictions contained in BCP 78 and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

## Intellectual Property

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in BCP 78 and BCP 79.

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at [ietf-ipr@ietf.org](mailto:ietf-ipr@ietf.org).

## Acknowledgement

Funding for the RFC Editor function is currently provided by the Internet Society.

