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

Status of this Memo

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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)}

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--  this ASN.1 module is part of RFC 3727; see the RFC itself
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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

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