ISO object identifiers

Introduction

IANA has allocated AARNet the Enterprise Number 8852. This is the ISO Object Identifier

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852)

Object Identifiers are used primarily to identify SNMP and LDAP variables.

Nothing in this procedure prevents institutions from applying to IANA for their own Enterprise Number (and thus Object Identifier). AARNet offer further allocation of its Object Identifier as a service to members.

Further allocation

The Object ID is further allocated to as follows:

aarnet(8852).*apl*(1)
aarnet(8852).*hub*(2)
aarnet(8852).*site*(3)
aarnet(8852).*project*(4)

It is a condition of allocation that the SNMP ASN.1, the LDAP LDIF or similar files are made publicly available, as this is in the interest of the AARNet community.

APL

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852).*apl*(1)

This is a further allocation to the operations of the Australian Academic and Research Network.

Region

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852).*hub*(2)

This is a further allocation to the operations of the Regional Networks.

Site

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852).*site*(3)

This is a further allocation to the operations of AARNet members and connected networks. Only one allocation will be made to each institution.

Project

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852).*project*(4)

This is a further allocation to the projects of the AARNet membership. Only one allocation will be made to each project.

Documentation

For illustrative purposes the allocation

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852).*site*(3).*exmaple*(1)

is made. The *example*(1) allocation will never be made to a real institution, so it can be safely used in examples in documentation.

Note that the DNS domain name

example.edu.au

can also safely be used in documentation.

Guidelines for further allocations by members

Allocation syntax

Further allocations should not use the 0 value. Unless there is good reason the allocations should number from 1. It is probably best to make allocations on a as-needed basis.

When an allocation is made also devise a text string to describe the allocation. The convention is to capitalise the beginnings of words, but to start with a lower-case character.

Make a further allocation

Information Technology staff are not the only members of an member that requires Object Identifiers. For example, Computer Science researchers may need allocations to develop SNMP Management Information Bases.

So make a further allocation for each group that uses Object Identifiers, say:

aarnet(8852).*site*(3).*example*(1).*example*(2)
aarnet(8852).*site*(3).*example*(1).*itServices*(2)
aarnet(8852).*site*(3).*example*(1).*compSci*(2)

Allocate to services

The wide use of Object Identifiers in LDAP, SNMP, iSCSI and many other protocols suggests that a further allocation to each service. For example:
aarnet(8852).*site*(3).*example*(1).*itServices*(2).*example*(1)
aarnet(8852).*site*(3).*example*(1).*itServices*(2).*directory*(2)
aarnet(8852).*site*(3).*example*(1).*itServices*(2).*smi2*(3)

Allocate to objects

This depends very much upon the application. Since most people are going to use allocations for LDAP, this document examines that closely.

Allocation to LDAP objects

For LDAP objects unique to an institution the convention is to name the schema in the style "*example*Person"; where *example* is from the domain name of the member, in this case "*example*.edu.au".

An allocation for the student identifier in the at Example University would be:

.*iso*(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).

aarnet(8852).*site*(3).*example*(1).
itServices(2).*directory*(2).
examplePerson(1).*studentId*(2)

which would be used in LDAP as

```
dn: uid=fab,ou=People,dc=example,dc=edu,dc=au
objectClass: examplePerson
studentId: 2001-123456
```

This would have the defining LDIF

```
dn: cn=schema
changetype: modify
add: attributetypes
attributetypes: ( 1.3.6.1.4.1.8852.3.1.2.2.1.2
        NAME 'studentId'
        DESC 'examplePerson at Example University'
        SYNTAX '1.3.6.1.4.1.8852.3.1.2.2.1.2' )
-
add: objectclasses
objectclasses: ( 1.3.6.1.4.1.8852.3.1.2.2.1
        NAME 'examplePerson'
        SUP  'eduPerson'
        MAY ( studentId )
-
```

Note that the schema *examplePerson* subclasses *eduPerson*, the Internet2 schema at:

http://www.educause.edu/eduperson/

Also strongly recommended is the directory design used by the *LDAP Recipe* at:

http://www.georgetown.edu/giia/internet2/ldap-recipe/

Commonly used LDAP objects and aarnetPerson

If people notice that the same LDAP objects appear in member schema, the AARNet community may choose the develop an *aarnetPerson* schema.

Suggestions for such objects are welcomed.

An *aarnetPerson* schema will subclass *eduPerson*.

The initial *aarnetPerson* will be defined as

.iso(1).*org*(3).*dod*(6).
internet(1).*private*(4).*enterprise*(1).
aarnet(8852).*apl*(1).
ldap(1).*aarnetPerson*(1)

with the LDIF

```
dn: cn=schema
changetype: modify
add: objectclasses
objectclasses: (
1.3.6.1.4.1.5923.8852.1.1.1
        NAME 'aarnetPerson'
        SUP  'eduPerson'
        MAY ( )
-
```

that establishes an empty *aarnetPerson* that AARNet members can subclass in their current directory structures.

An example directory entry for a person at a university could look like:

```
dn: uid=fab,ou=People,dc=example,dc=edu,dc=au
objectclass: person
objectclass: organizationalPerson
objectclass: inetOrgPerson
objectclass: account
objectclass: posixAccount
objectclass: top
objectclass: kerberosSecurityObject
objectclass: shadowAccount
objectclass: eduPerson
objectclass: aarnetPerson
objectclass: examplePerson
uid: fab
cn: Fred Bloggs
displayName: Fred Bloggs
givenname: Fred
sn: Bloggs
shadowlastchange: 00000
```

```
shadowmax: 99999
shadowwarning: 7
krbname: fab@example.edu.au
loginshell: /bin/bash
uidnumber: 2001001
gidnumber: 1001001
homedirectory: /home/fab
edupersonnickname: Fred
edupersonorgdn: dc=example,dc=edu,dc=au
edupersonorgunitdn: ou=People,dc=example,dc=edu,dc=au
edupersonprimaryaffiliation: employee
edupersonaffiliation: employee
edupersonaffiliation: staff
edupersonaffiliation: member
edupersonprincipalname: fab@example.edu.au
displayname: Fred Bloggs
initials: FAB
o: Example University
st: State
l: Exampletown
c: AU
mobile: +61 412 345 678
telephonenumber: +61 1 2345 6789
postaladdress: Building 1$Example University$Exampletown State 1001$Australia
postalcode: 1001
preferredlanguage: en-au
labeleduri: http://www.example.edu.au/%7Efab/ Personal home page
mail: fab@example.edu.au
userpassword: {ssha}...
creatorsname: cn=Manager,dc=example,dc=edu,dc=au
createtimestamp: 20010101000000Z
modifiersname: uid=fab,ou=People,dc=example,dc=edu,dc=au
modifytimestamp: 20010808011425Z
```

Allocation to SNMP objects

We suggest that allocations are of the form:

aarnet(8852).*site*(3).*MEMBER*(*m*).*DEPARTMENT*(*n*).*SOFTWARENAME*(*x*).*MIBVERSION*(*y*)...

For example, the version of Fuzzy Widget could be found in the SNMP variable:

aarnet(8852).*site*(3).*example*(1).*compSci*(4).*fuzzyWidget*(4).*mib1*(1).*fuzzyVersion*(1)

Record keeping

It is important to record all allocation of Object Identifiers. To assist this AARNet will act as a repository for ASCII text, ASN.1 definitions (used in SNMP) or LDIF (used in LDAP) describing further allocations.

Previous object identifier

AARNet has another Object Identifier. However, the records to the allocation have been lost. No new allocations will be made until the records are found. The search is continuing. New allocations will be made from the new range.

References

Allocation records:

http://www.aarnet.edu.au/network/objectidentifier/8852aarnet/

eduPerson LDAP schema:

http://www.educause.edu/eduperson/

LDAP recipe:

http://www.georgetown.edu/giia/internet2/ldap-recipe/

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