**Object Identifiers**

Object Identifiers are simply the names assigned to things. Object Identifiers can refer to objects of many types, including variation between abstract classes and actual instances and physical devices versus logical objects. All of these things and more are named.

**On Object Identifiers vs ITU-T OIDs**

Note that ITU-T defines a number of specifications pertaining to Object Identifiers (OIDs), but other implementations that are not ITU-T OIDs also can be considered Object Identifiers. In this document we will use “OID” to refer to ITU-T OIDs, and “Object Identifier” to refer to the concept more broadly.

**Types of Identifiers**

* Instances versus Class – does the identifier refer to a thing or to a type of thing?
* Unique versus non-unique – is every identifier issued to only one object?
* Synonyms versus no synonyms – are objects permitted multiple synonymous identifiers?
* Governance options – How are names registered and managed? Does one authority control the entire namespace, or is there hierarchical management?
* Human-usable versus machine-usable
* Global versus local namespace

**Types of Objects**

The concept of object identification applies to numerous types of objects. Names can identify specific instances of objects or they can refer to classes of object – consider a network device, it is important to identify the specific network interface associated with that device, and it is also important to identify the type of device.

* Physical versus Logical
* *What else?*

**Physical Objects**

Object Identifiers are applied to any number of things found in the physical world: computing devices, mobile devices, servers, network infrastructure, meters, sensors, cameras, actuators, locks, medical implants, vehicles (and vehicle components) and more. Each of those things can be referenced by an identifier, and additional identifying information can be conveyed regarding relationships to other objects. For example a server may have a unique hostname, but also be assigned a number of IP addresses corresponding to its physical network interfaces. The full identification of the system would include the name of the server, the IP address of each network interface and the association between the server and the network interfaces.

ITU-T OIDs can be used to refer to physical objects, prominently in the Management Information Base (MIBs) used by the Simple Network Management Protocol (SNMP).

**Logical Objects**

In addition to physical things, the area of identification of logical objects deserves consideration. Logical objects include software, services, data and databases, documents and other digital objects, and more. Identification of software is an area of considerable interest to a number of organizations, and approaches include Software ID Tags and the Common Platform Enumeration. ITU-T OIDs can be used to refer to a number of logical objects, including (*TBD* *pull from* [*OID flyer*](http://www.itu.int/oth/T0B04000048/en)). Web services can be identified by the URL used to access them. The Digital Object Identifier (DOI) standard is standardized as ISO 26324:2012, and provides a way of directly referencing digital objects as opposed to using a URL to identify how to access the document, which may not remain valid over time.

**References**

|  |  |  |  |
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