

Globally unique identifiers for course offerings

internet2-courseid-offering-unique-id-200505

Status of this Memo

The (200505) version of the recommendation for forming globally unique identifiers for course offerings is described in this document. This version is appropriate for adoption in a production enterprise directory service environment.

Abstract

For many educational purposes, it would be advantageous for a course offering to have a globally unique identifier. Example scenarios illustrating this point can be found at the MACE [CourseID WG web site](#). This document is a draft proposal for the syntax of such a globally unique identifier. The resolution of such identifiers is out of scope for this draft. Even without automated resolution services, such identifiers, when paired with services like those provided by the MACE [Shibboleth](#) project, could support controlled inter-institutional access to course offerings.

1. Context and assumptions

Context

This proposal is intended to work within relevant existing standards, in particular, within the [IMS Enterprise Specification](#).

Assumptions

This proposal assumes the eduCourse [data model](#) (<http://middleware.internet2.edu/courseid/docs/internet2-courseID-eduCourse-200505.html>) developed by the CourseID WG. Since the proposal is primarily concerned with controlling access to on-line e-learning materials, the entity to which an identifier needs to be assigned is a particular instance of a course or section of a course offered during a specified time interval. For a traditional face-to-face course, this time interval may correspond to an academic term, while for asynchronous course offerings, it might correspond to the beginning and ending dates between which a particular student works through the course materials. The CourseID WG data model terms this instance a "course offering." I.e., this proposal is about assigning, managing and using single, globally unique identifiers for course offerings and sections within them.

2. Problem statement

Version 1.1 of the IMS Enterprise Specification explicitly states that it focuses on systems within the same enterprise or organization. This means that course offerings that span two or more institutions are not directly supported by that specification. Yet there is a pressing need to address such inter-institutional e-learning applications. If a course offering is given only a locally unique identifier, there is the possibility that, by chance, any single course identifier, when taken at the inter-institutional level, may refer to two or more distinct course offerings at different institutions, leading to an ambiguity of reference.

3. Proposed solution

Any properly constructed Universal Resource Identifier (URI) will have the property of global uniqueness. The CourseID WG recommends that URIs be used as identifiers for course offerings (and sections within them, if these need to be given distinct identity). This recommendation to adopt URIs specifically includes both the familiar URLs as well as URNs and Digital Object Identifiers (DOIs, in their proposed URI format). This recommendation leads to uniqueness across identifiers and a defined identifier syntax while placing minimal constraints on creators of such identifiers. An example URL course offering identifier might be:

`http://wisc.edu/course/offering/2004fall/physics1101`. An example DOI-based course offering identifier might be: `doi:1.23/2002/january/21/4690` (see `http://www.doi.org/handbook_2000/enumeration.html#2.9`).

As noted, URNs may also be used to generate course offering identifiers. This paragraph offers non-normative comments on a URN approach. On request, MACE assigns namespace authority to institutions and other bodies within the higher education community. For example, the University of Chicago has registered `urn:mace:uchicago.edu`. If the University of Chicago decided to assign URN-based course offering identifiers under a "crs" node, it might come up with an example like `urn:mace:uchicago.edu:crs:Physics-101:7D60E22A3:section-01`.

4. Usage notes

Some identifier schemes are meant primarily for use by humans, and the values may give some hint of the semantic base object being identified. For example, NetIDs often carry some component of the associated holder's name, thus suggesting that whatever is being identified is associated with that individual. At the other extreme are UUIDs as originally defined in the Distributed Computing Environment (DCE) model. UUIDs are 128 bit numbers assigned to persistent objects. They have no semantic content in and of themselves, but are simply globally unique numeric identifiers that may be bound to objects of any type. They are intended primarily for application to application use. When they occur in documents, they are often represented as 32-digit hexadecimal numbers that make human handling cumbersome at best.

The course offering identifiers proposed here may be somewhat closer to NetIDs than UUIDs in this regard. For example, a URN namespace identifier prefix tempts the human reader to associate meaning with it. A first encounter with the prefix `urn:mace:rutgers.edu:crs-offr` might lead someone to form a rough and ready notion of what is being identified by the remainder of the string.

The MACE CourseID Working Group believes it is impractical and unnecessarily constraining to prescribe the style of the course offering identifier string. There is work underway in the learning management community to settle on a standard for these and other identifiers. The proposal in this document is likely to accommodate any standard that may emerge in this space since almost any recommended solution is likely to have a URI syntax representation.

In the absence of a single agreed-upon international standard, some institutions may prefer humanly-readable forms of identifiers reminiscent of entries in a timetable of course offerings for a given term. Others may opt for a more opaque string. But in all cases, it is critical to realize that each course offering will necessarily have a rich set of associated metadata. A course offering identifier may help locate that metadata, but it can never substitute for it. Meaningful inter institutional sharing of course materials will require agreements on the syntax, semantics and location of such metadata. That work is outside the scope of this proposal.

Authors' Contact Information

Grace Agnew
Rutgers University

New Brunswick, NJ
US

Phone: +1

E-Mail: gagnew@RCI.RUTGERS.EDU

Keith Hazelton
University of Wisconsin-Madison
1210 W. Dayton St.
Madison, WI 53706
US

Phone: +1 608 262 0771

E-Mail: hazelton@doit.wisc.edu
