Group Names

Document Status: v03. This is a strawman to seed discussion. It's also not entirely finished.

There is also a 1-page precis of this naming plan in visio format.

1. Introduction

NSIT plans to implement new modes of support for group collaboration, access management, and, eventually, auditing of who has access to which resources. Campus organizations and individuals will use management tools provided by NSIT to define groups and use them to manage access to a variety of resources.

A key component of this framework is a naming plan that (1) supports the incremental addition of resources and groups, (2) ensures that groups and resources created independently do not have conflicting names, and (3) enables delegation of authority in support of (1) and (2).

Experience elsewhere teaches us that the number of groups and the number of resources they are used to protect expands rapidly upon introduction of this type of management capability. For example, to manage access to per-account fiscal reports may require a group for each fiscal account, resulting in many thousands of groups to implement the access policy for that single application. Hence, a plausible naming plan for groups and resources should be established before other aspects of the framework are put in place. This document specifies that naming plan, including syntax and top-level name components.

2. Concepts and terminology

Short and long names

This plan specifies two forms of group names. One is a relatively short form, typically meaningful to humans but not full English words, and normally writable as ASCII strings without white space. Such identifiers are intended to fit in easily where other identifiers typically are found. The other is a longer form used for display, for example, of the official or fully readable form of the group's name. It may contain spaces and typical printable characters.

Namespaces, stems, and naming authorities

It is a requirement that groups be able to be created (hence named) by potentially very large numbers of people. To avoid conflicts, and to avoid the need for an approval process for each proposed group name, a hierarchical naming scheme is used. This is similar to other environments in which large-scale distributed naming is needed (e.g. DNS, file systems).

Using the terminology promoted in the Internet2 Grouper project, specific group namespaces or name components are referred to as "stems". A stem is created for the purpose of creating and managing groups (and other stems) based on it, and to control access to these operations. The entity (or entities) responsible for managing a stem is a "naming authority" for that stem. A naming authority may delegate control of namespaces based on its stem to other naming authorities.

Names and URIs

In many cases a group name is used in a context where it is understood to be a group name (e.g., "require group foo" in Apache access control statements). The short form is suitable for these contexts. For more general contexts, a URI form is also defined below so that each group has a globally unique name.

3. Syntax

A group name is a sequence of name components, by convention written left-to-right from highest-level to lowest-level naming authority. Name components are written separated by a delimiter character.

Character set for components of short names: a-z, A-Z, 0-9, ".".

Character set for components of long names: all ASCII characters except ".".

Delimiter: The delimiter between components is a full colon (":").

Note that a particular name may be used both as the name of a group and as a stem on which other group names are based. For example, the name

uc:org:ci

might both be used as a group (i.e., have a member list and be used in group expression contexts) and as a stem for more group names, for example:

uc:org:ci:foo

uc:org:ci:bar

It is permissible to write a stem with a trailing ":" character to clarify that it refers to a stem. For example, "uc:org:ci:" refers unambiguously to the stem with that name.

4. Top-level stems

NSIT, acting as institutional naming authority, controls the top-level stem spaces listed below. Additional top-level stems can be created as needed, based on discussion with stakeholders and establishment of clear definition and requirements. Like any stem, a top-level stem must have a well-defined naming authority to manage it.

Syntax of names under each stem can be further constrained by its naming authority.
4.1 Institutional root - "uc:"

The top-level stem "uc" is established to delegate naming authority for naming groups based on organizations and activities formally constituted within or affiliated with U Chicago. To facilitate management and use of the resulting namespaces, institutional organizations and cross-cutting activities are each given their own special stem under "uc", as detailed in the next two subsections.

The "uc" stem may also be used to name groups distinguished by their relevance to U Chicago as a whole. For example, the Board of Trustees might be listed in the group

uc:trustees

4.2 Institutional organizations - "uc:org:"

The stem "uc:org" is established to name groups based on Divisions, Schools, Departments, Institutes, Committees, Centers, and other organizations formally constituted within or affiliated with U Chicago. The following examples illustrate several types of organizations to which naming authority can be delegated under this stem:

<table>
<thead>
<tr>
<th>long name</th>
<th>short name</th>
<th>notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate School of Business</td>
<td>uc:org: gsb:</td>
<td>Namespace for groups and subordinate namespaces for which authority is given to appropriate persons in the GSB, a School of U Chicago.</td>
</tr>
<tr>
<td>Committee on Evolutionary Biology</td>
<td>uc:org: ceb:</td>
<td>Namespace for groups and subordinate namespaces for which authority is given to appropriate persons in the Committee on Evolutionary Biology, a unique arrangement for collaboration among numerous U Chicago departments and several Chicago area museums.</td>
</tr>
<tr>
<td>Department of Mathematics</td>
<td>uc:org: math:</td>
<td>Namespace for groups and subordinate namespaces for which authority is given to appropriate persons in the Department of Mathematics.</td>
</tr>
<tr>
<td>Chicago Theological Seminary</td>
<td>uc:org: cts:</td>
<td>Namespace for groups and subordinate namespaces for which authority is given to appropriate persons in the Chicago Theological Seminary, which has a formal affiliation with U Chicago.</td>
</tr>
</tbody>
</table>

Note that this plan explicitly permits an organization which is part of a larger organization to have its own namespace within uc:org:. For example, the Department of Mathematics can have its own namespace under uc:org:, and it might also have another one assigned to it under uc:org:psd: by naming authorities for the Physical Sciences Division.

It might be instructive to browse a list of UC organizations and their potential naming stems for a glimpse of what a fleshed out uc:org: space might look like under this naming plan.

4.3 Other institutional groups - "uc:x:"

The stem "uc:x" is established to name groups whose activities fall outside of the management or sponsorship of any single formal U Chicago organization. To be used sparingly, so that we don't make the naming plan overly complicated just to deal with outlying cases.

4.4 Reference data - "uc:ref:"

The top-level stem "uc:ref" is established to name systems of institutional data which are advantageously exposed as groups for use by applications. For example, student statuses, institutional affiliations, courses, and organizational hierarchies all determine systems of groups. Groups used to manage processes that maintain these structures may also be named with this stem. Some examples of reference data are:

<table>
<thead>
<tr>
<th>long name</th>
<th>short name</th>
<th>notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliation</td>
<td>uc:ref: affil:</td>
<td>For each of the eduPersonAffiliation values associated with CNet accounts, maintain a group whose members are the people with that affiliation. Eg, uc:ref:affil:faculty is a group whose members are everyone that's &quot;faculty&quot; according to the business rules and processes established in conjunction with the Provost's Office.</td>
</tr>
<tr>
<td>Courses</td>
<td>uc:ref: course:</td>
<td>Groups associated with each course list the students, instructors, TAs, or others whose access to course-related resources needs to be managed. Groupings of course sections, or of the students or instructors, etc, in several course sections, can also be maintained in this namespace.</td>
</tr>
<tr>
<td>Departments</td>
<td>uc:ref: dept:</td>
<td>Naming stem for one or more organizational hierarchies, optionally with groups listing those who are associated with each node in each hierarchy, as may be useful.</td>
</tr>
</tbody>
</table>

4.5 Application-specific groups - "app:"

The top-level stem "app" is established to name groups that are maintained by and for specific applications. Although such groups could be located under other root stems, the app: stem clearly identifies groups whose use is specific to particular applications to enable special provisioning, reporting, or other special handling of such groups. For example, the developers of the fictional locally built application "fooMore" might rely on the groups

app:foomore:admin
app:foomore:updater

to enable persons in the Department of Bar, for whom it was written, to manage who has appropriate fooMore access. The prototype Authority Manager application is also designed to maintain systems of groups that are "tweaks" to official departmental groups in an application-specific namespace.

The example above places "foomore" directly under "app:". Having a single namespace for all application names could cause problems with name duplication. Another approach is to delegate a suitable stem under app: to those in authority for a given application. So, the example groups above might alternatively be
This naming plan does not specify which mode of use pertains to the app space, leaving that practice to instead develop as use cases arise.

### 4.6 Resources - "rsrc:"

The top-level stem "rsrc" is reserved for inclusion of resource names within a common naming plan for groups and resources. Its use is not specified in this document.

It is mentioned here to recognize the role that a common naming plan may have in meeting a basic functional requirement: the ability to determine to which resources a given group's members have access. This capability is core to a good group management system, and so modeling resources within a common naming system is one way to provide the capability.

### 4.6 User root stem - "user:"

The top-level stem "user" is established to enable naming of groups by individual users. Under this stem is a stem for each user with a CNetID or other username that has been integrated with the CNet user namespace. For example,

```
user:gjackson
```

is a stem whose naming authority is the person holding the CNetID "gjackson". Examples of groups names based on that stem are

```
user:gjackson:srdir_search
user:gjackson:whodunit_admins
```

### 4.7 Sandbox stem - "sandbox:"

The top-level stem "sandbox" is established to provide a harmless area in which to try out potential naming schemes or to exercise the naming plan, its management systems, or integration with associated resources.

### 4.8 Group namespace administration - "etc:"

The top-level stem "etc" is established to name groups related to the management of the group naming system itself. For example, the group

```
etc:admins
```

might list the people with rights to modify or extend the group naming system.

### 5. Exceptions

There may be existing practice where centrally-managed groups are named with names that do not conform to the scheme defined above. There may also be cases where applications require group names that do not conform to this plan, but it is still appealing to manage such groups centrally. In these cases exceptions may be granted. Groups named with exceptional names should still benefit from participation in group management. Such names may not be used as stems.

Exceptional groups are named under the top-level stem "legacy". Groups in this namespace appear elsewhere without reference to their parent stem.

For example, the exceptional group

```
legacy:xyz-team
```

appears in its legacy context as

```
xyz-team
```

### 6. Representation of group names as URIs

For use in URI contexts a URI namespace is assigned in U Chicago's URN namespace:

```
urn:mace:uchicago.edu:group:
```

A group URI is formed by appending the short-form group name to that namespace. For example, given the short-form group name:

```
uc:org:ci:staff
```

the URI form is:

```
urn:mace:uchicago.edu:group:uc:org:ci:staff
```

### 7. Example practices

Some examples are given to illustrate ways in which the group naming plan above might be used.

**TBD**

Instructor-sourced course groups for TAs
Optional groupings of courses by section

Mapping of uc:org and uc:x into webshare

Departmental or organizational hierarchies

Authority Manager’s tweaked hierarchies

8. Related matters

How NSIT should determine short and long names of stems and to whom their management should be delegated is a process to be detailed elsewhere, but is obviously key to the implementation of this plan. Other naming authorities will likewise share this concern.

The naming of resources and the association of groups with them may require its own processes and tools.

This plan does not prescribe which groups and namespaces should be managed by which group and namespace management tools, though functional requirements beyond those addressed by this plan might well constrain such choices.

Although not mandated under this plan, group names may well appear within URLs or other identifiers that users must sometimes type or fit into documents. Hence, brevity of short names is valued.