Overview

• Schema shortcomings around extensibility were discovered during vCard discussion
• Lack of formal “references” – issue #33
• Issues with extension mechanism – issue #38
• Process for registering extensions – issue #30
Extensibility – Group Example

• Group membership is modeled in SCIM through the Group “members” attribute and the User “groups” attribute.

• Q: What happens if you want to store more information about a user’s group assignment? For example, expiration date.

• A: This can be modeled as a new resource type. However, SCIM data types don’t handle references well.
Extensibility – References

• Issue #33 opened to add “reference” data type, which is a reference to another SCIM resource.
• User, Group, EnterpriseUser schemas changed to use reference where appropriate.
• Schema resource can include “referenceTypes” for attributes to specify which SCIM object types can be referenced for a given attribute.
• See proposed changes in issue #33.

http://trac.tools.ietf.org/wg/scim/trac/ticket/33
Extensibility – Group Example

GET /GroupMemberships/123 HTTP/1.1
Host: example.com
Authorization: Bearer h480djs93hd8

{
    "group": "https://example.com/v1/Groups/456",
    "user": "/Users/789",
    "assigned": "2013-03-01T04:56:22Z",
    "expiration": "2013-03-31T04:56:22Z"
}

Absolute URI reference
Relative URI reference
More Extensibility Problems – Issue 38

• Current schema document is light on details around extensibility.
• It is impossible to tell which extensions a resource contains. The “schemas” attribute may not be enough.
• Possibility for collisions between attribute names within a schema (if it contains multiple extensions).
• Need more detail about how extensions are defined.
  – Can you add new sub-attributes to a complex attribute?
  – Can’t easily share extensions between multiple resource types.
More Extensibility Problems – Issue 38

• Proposed solution
  – Clearer definitions of schema vs. resource vs. extension.
  – Separate ResourceTypeTypes and Schemas resources
    • Resource type has a URL and information about resource.
    • Schema has attributes used by a resource type. Schemas can be used as primary attributes or extensions for ResourceTypeTypes.
  – Resources reference resource types instead of schemas

http://trac.tools.ietf.org/wg/scim/trac/ticket/38
GET /ResourceTypes
[
{
    "name": "User",
    "endpoint": "/Users",
    "schema": "urn:scim:core:User:1.0",
    "extensions": [
        "urn:scim:schemas:extension:enterprise:EnterpriseUser:1.0",
        "urn:edu:Staff:2.0"
    ]
},
{
    "name": "Group",
    "schema": "urn:scim:core:Group:1.0",
    "endpoint": "/Groups"
}]

Schemas Resource

GET /Schemas
[
  {
    "id": "urn:scim:core:User:1.0",
    "name": "User",
    "description": "This is a basic User",
    "attributes": [ [ "name": "id", "type": "string", "multiValued": false, "description": "Unique identifier....", "readOnly": true, "required": true, "caseExact": false ] ]
  }, ...
]

...
Example User using resourceType

GET /Users/123

{
  "username": "bjensen",
  "meta": {
    "resourceType": "User",
    ...
  }
}

...

"urn:scim:schemas:extension:enterprise:EnterpriseUser:1.0": {
  "employeeId": "12345"
}

Note: Lack of “schemas” attribute. Schemas are determined by looking at referenced ResourceType.
Extension Registration – Issue 30

• vCard has a process around registering extensions with IANA.

• SCIM could benefit by adopting a similar process.
  – Could help us in defining what an extension is and how to use it (issue 38).
  – Creates a registry of extensions.

• Volunteers?

[http://trac.tools.ietf.org/wg/scim/trac/ticket/30](http://trac.tools.ietf.org/wg/scim/trac/ticket/30)