Distributed Authorization

…as conceived by UMA

18 Oct 2012

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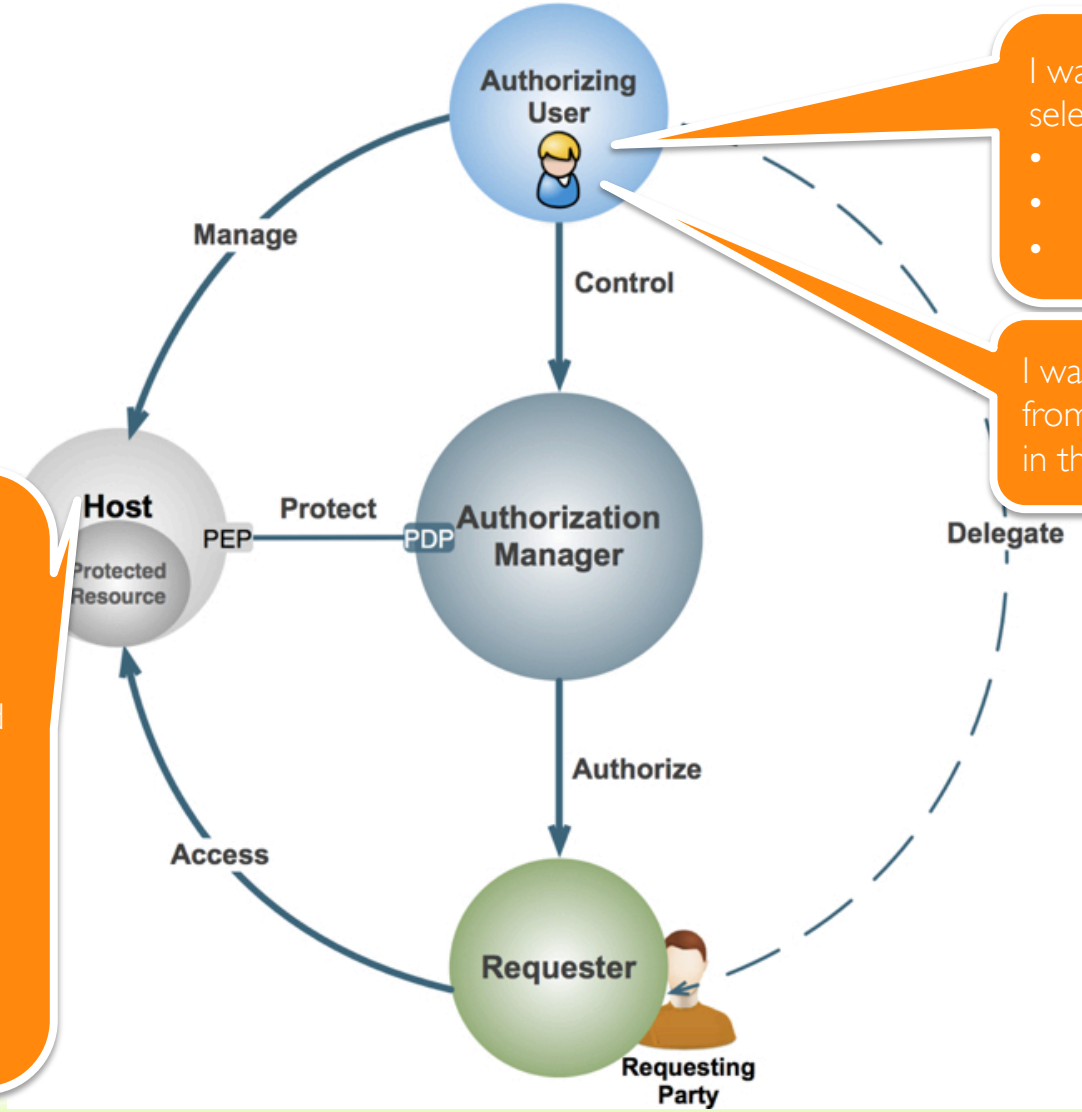
@UMAWG, @xmlgrrl

UMA turns online sharing with *anyone* into a "privacy by design" solution



I want to **share** this stuff selectively!

- Among my own apps
- With family and friends
- With organizations

I want to **protect** this stuff from being seen by everyone in the world!

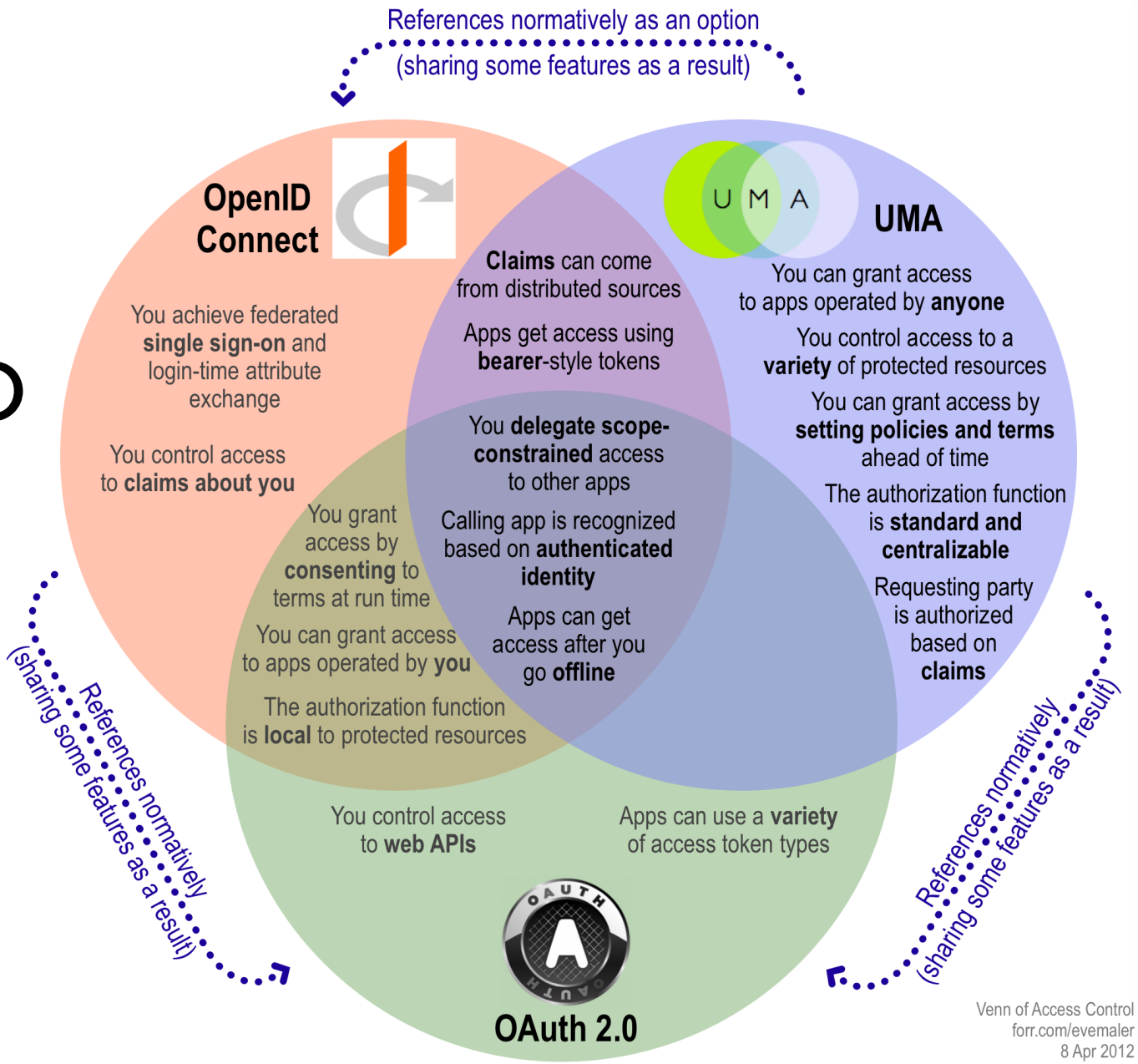
Historical
Biographical
Reputation
Vocational
Artistic/user-generated
Social
Location/geolocation
Computational
Genealogical
Biological/health
Legal
...

UMA gives users a true digital footprint control console

- *Web 2.0 access control is inconsistent and unsophisticated*
- *To share with others, you have to list them literally*
- *You have to keep rebuilding your "circles" in new apps*
- *You can't advertise content without giving it away*
- *You can't get a global view of who accessed what*

- You can **unify** access control under one app
- Sharing policies can test for **claims** like "over 18"
- You can **reuse** the same policies with multiple sites
- You can control access to stuff with **public** URLs
- You can manage and **revoke** access from one place

UMA leverages OAuth 2.0 and OpenID Connect



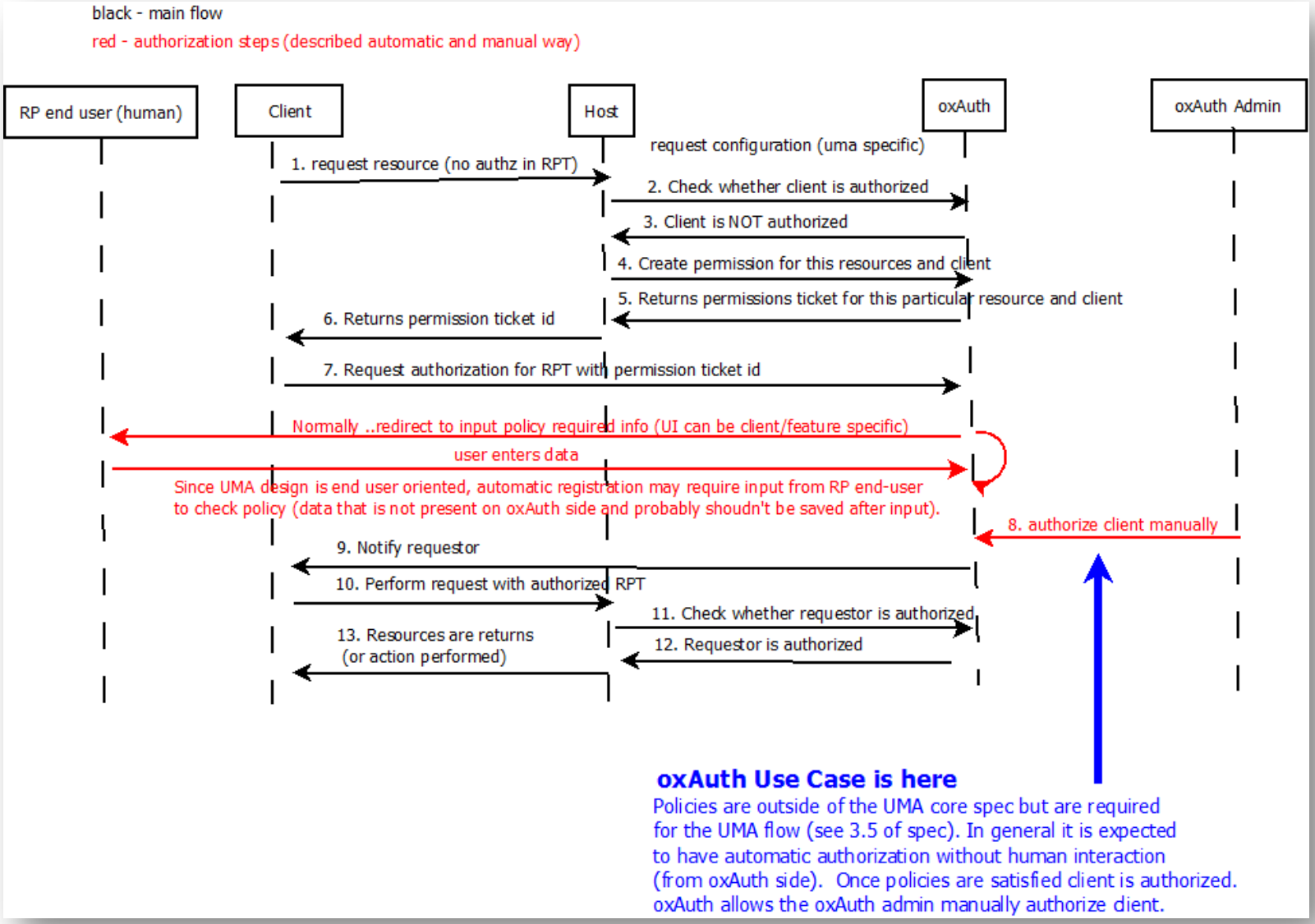
Thoughts on UMA, vis à vis XACML

- As RESTful, resource-oriented, and web-dev-friendly as possible, and rooted in OAuth by design
- Explicitly enables a "policy self-administrator"
- Enables extreme loose coupling between AM and host
- By default, this separation is "not-quite-PDP" and "slightly-more-than-PEP"
  - AM is also, implicitly, a PAP and PIP
- Policy expression and evaluation are out of band
  - AM integration with XACML policy would be valuable!

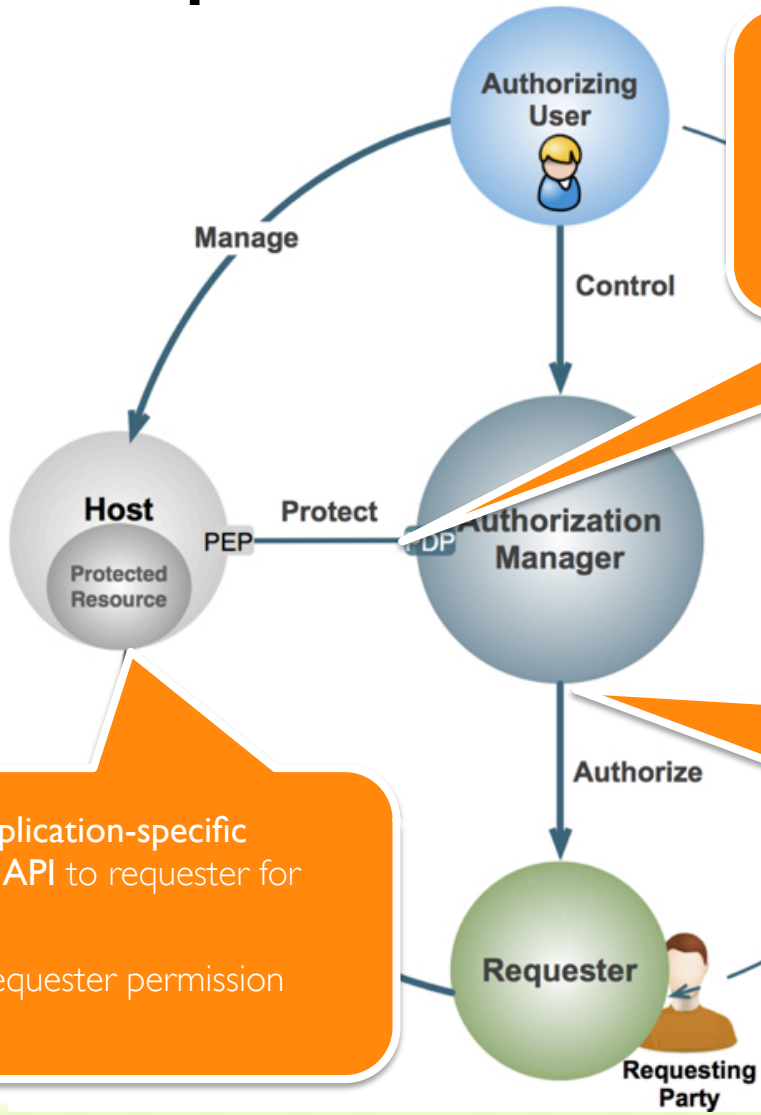
Enterprise use cases are coming to the fore

- Use case: organizational API authorization
  - The authorizing party is the enterprise
  - Its agent is a policy administrator
  - It controls what parties access what scopes at what endpoints
  - Akin to traditional enterprise access management, for the "API economy"
- oxAuth (http://ox.gluu.org/jira/browse/OXAUTH) already implements OAuth 2.0 and OpenID Connect
  - Including session management
  - The team is finding it relatively easy to add UMA support

oXAuth sequence diagram



UMA defines how to protect three APIs



AM presents **UMA protection API** to host for registering resources, checking token status, etc.

Requires an OAuth protection API token (**PAT**)

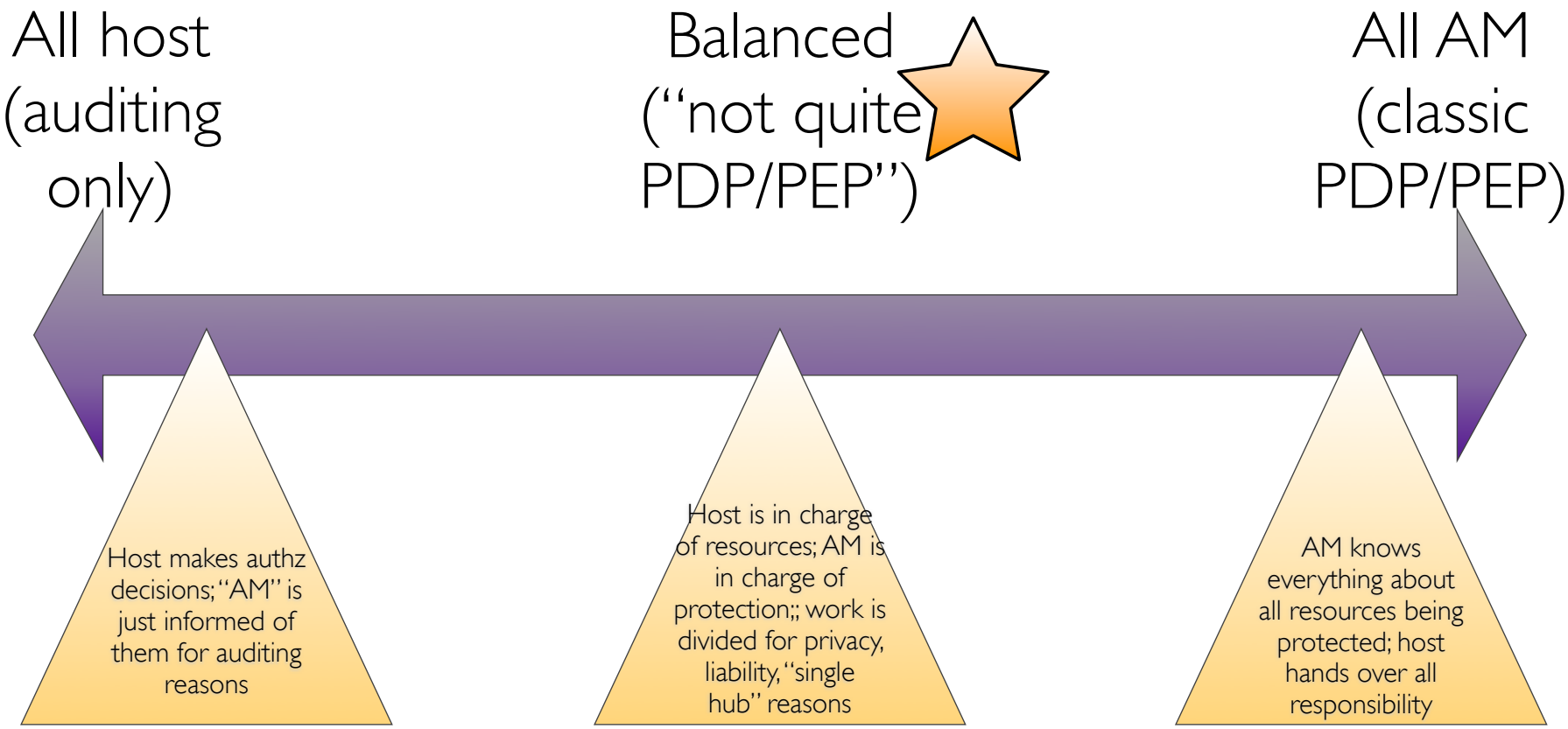
AM presents **UMA authorization API** to requester for requesting access, providing claims, etc.

Requires an OAuth authorization API token (**AAT**)

Host presents an **application-specific protected resource API** to requester for attempting access

Requires an UMA requester permission token (**RPT**)

With a host and AM run by different companies, responsibility matters



host manages resources;
AM protects them

UMA's "Binding Obligations" spec attempts to account for responsibility

Binding Obligations on User-Managed Access (UMA) Participants

docs.kantarainitiative.org/uma/draft-uma-trust.html

Binding Obligations on User-Managed Access (UMA) Participants

Network Working Group	E. Maler, Ed.
Internet-Draft	XMLgrrl.com
Intended status: Standards Track	July 24, 2012
Expires: January 25, 2013	

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Binding Obligations on User-Managed Access (UMA) Participants
draft-maler-uma-trust-00c

R4. When the AM issues an RPT to a Requester, the Requesting Party using that Requester gains an obligation to the Host Operator to represent the legitimate bearer of the RPT whenever it presents this token to the Host.

Comments: In the case where the "UMA bearer token profile" is being used, the token cannot be bound in any meaningful way to the specific requester and requesting party it applies to, so the Requesting Party takes on the obligation of protecting the RPT from theft and not maliciously sharing the RPT to be used by others. Defining and using different UMA token profiles can mitigate the risk of a failure on the Requesting Party's part.

The RPT is extensible

Authorization data provided by AM / *Token format on the wire*	*Assertion with protected content that the host can locally unpack*	*Artifact that the host must dereference with the AM at run time*
Permissions *(entitlements with a validity period)*		**Standardized** as a MTI UMA token profile called "bearer": PDP-- / PEP++
Authorization decision *(XACML-like true PDP / PEP)*	Work to define UMA token profile about to get underway	
Claims *(done in many OAuth deployments, proprietarily)*	Anticipate interest due to OAuth pattern	
Policies *associated with the requested resource ("sticky policy"-like)*		

The authorization data associated with a "bearer" token

abstract; meaning is "owned" by host

scopes akin to OAuth's, but with JSON metadata

```
HTTP/1.1 200 OK
Content-Type: application/uma-rpt-status+json
Cache-Control: no-store
...

[
  {
    "resource_set_id": "112210f47de98100",
    "scopes": [
      "http://photoz.example.com/dev/actions/view",
      "http://photoz.example.com/dev/actions/all"
    ],
    "exp": 1300819380
  }
]
```

permissions expire

Next steps for UMA

- Continue to revise the spec (now at rev 05*) in response to experience and comments
  - Including defining additional UMA token profiles
- Conduct interop testing through the OSIS wiki**
- Support implementers and deployers
- Facilitate open source
- Liaise with AXN and other actors in the broader "trusted identities in cyberspace" ecosystem
  - Including the XACML TC, if there's interest?
- More webinars and tweet chats…

* http://kantarainitiative.org/confluence/display/uma/UMA+1.0+Core+Protocol
** http://osis.idcommons.net/wiki/UMA1:UMA_Interop_1

Questions?
Thank you

tinyurl.com/umawg | tinyurl.com/umafaq | tinyurl.com/umavl
tinyurl.com/umatrust | tinyurl.com/umaiop | tinyurl.com/umawgfb