

UMA Implementations

This page gathers information about implementation efforts and interest, along with interoperability testing plans. Maciej Machulak is the UMA group's implementation coordinator. Key existing implementations that we know about are noted below, in alphabetical order of the project or organization.

Date labels indicate when an entry was added or last updated on this page. Implementers are welcome to get in touch with the [implementation coordinator](#) or any member of the [leadership team](#) to add entries or make corrections.

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ForgeRock

OCT '17 The company [ForgeRock](#) (also at [@ForgeRock](#)) has an [Identity Platform](#) that includes an [implementation of UMA 2.0](#), with both an "UMA Provider" (authorization server component) and an "UMA Protector" (resource server component), targeted at individual consent and data sharing use cases. The case studies [Users Managing Delegated Access to Online Government Services](#) and [Aggregating and Sharing Pension Information](#) were based on POCs performed with earlier versions of the ForgeRock Identity Platform.

Gluu

MAY '18 Open source software vendor [Gluu](#) (Twitter [@GluuFederation](#)) has implemented UMA 2.0 Authorization Server endpoints since Gluu Server 3.1.2. It's client middleware service, [oxd](#), also provides software for UMA RS and Client software. Gluu uses it's UMA software in it's API access management product and also to protect the Gluu Server SCIM endpoints for user provisioning. Gluu has been an early adopter of UMA since version 1.0, as well as federation standards such as SAML, OpenID Connect and OAuth.

HealthyMePHR

MAR '18 [HealthyMePHR](#) was implemented by [Lush Group, Inc.](#) It implements UMA 1.0, with plans to update to full UMA 2 support. The software is currently in prototype form. It implemented the [HEART profiles](#) in conjunction with HEART specification development; it consists of a FHIR-based RS, AS and Client.

[HealthyMePHR](#) was selected as a Phase 2 winner of The Department of Health and Human Service's [Move Health Data Forward Challenge](#). Since the intention was to free the patient from the many roadblocks currently in place, the implementers wanted to implement a wide ecosystem for exchange, adding an external OpenID Connect IdP to support that goal. Since other components were not available at the time of development, the solution was developed to be free standing. It is the intention that any of the components could be substituted. While the initial client is a HEART based viewer, it is actually accessing discrete data. This approach demonstrates an important building block for accessing discrete data via an API, under the control of patient-directed consent. [HealthyMePHR](#) has also been connected to EMRs via CDS hooks, providing physician's with the ability to access the patient's data which may be external to the EMR. For more information, see the [Case Studies](#) page or contact info@gisoftware.com.

HIE of One

AUG '18 The [HIE of One open-source project](#) is run by Michael Chen, MD and Adrian Gropper, MD. It implements an UMA2 authorization server, and supports dynamic client registration for resource servers and clients. HIE of One serves as an OpenID Connect relay to other OIIC services, such as Google and Twitter. This authorization server is meant to be deployed as a single instance per patient (user). It is licensed through GNU AGPLv3. Support information is available at the [distro link](#).

HIE of One acts as a Health Information Exchange service but under control by the patient themselves. It is coupled in the same root domain URL with a resource server that acts as a patient-centered health record (NOSH ChartingSystem), although they are two separate projects. HIE of One

allows the patient to control user-managed access to her resources served by NOSH ChartingSystem using a specific RESTful API (FHIR) for health-related information. This allows other third-party applications to take advantage of the patient's health-related information in a secure and privileged manner, governed by the user and not by another third party.

HIE of One is not in production at this time; fully working code is in GitHub and is used for current demonstration of how HIE of One is coupled with NOSH ChartingSystem for the above functionality.

This implementation leverages third-party OAuth and OpenID Connect implementations Google OAuth2, Twitter OAuth2, and mdNOSH (this is for demo purposes for physician single-sign-on, not federated). HIE of One also implements blockchain-based authentication using the uPort implementation and the project is tracking the Decentralized ID (DID) standards for self-sovereign identity and W3C verifiable claims as these progress.

Jericho Systems

MAR '18 In 2016 the company [Jericho Systems](#) announced a product, [EnterSpace 9](#), with UMA support as follow-on to its Consentral on FHIR product.

MITREid Connect

The open-source [MITREid Connect project](#) has [UMA1 support](#). An experimental branch called MPD (for "multi-party delegation") has been used as a sandbox for UMA2 features, but has not yet been updated to full UMA2 support.

Pauldron

JAN '18 [Pauldron](#) is an open-source (MIT license) UMA authorization server, with several extensions catering to use cases that have come out of healthcare-related work in the HL7 environment, available on [GitHub](#).

RedHat KeyCloak

AUG '18 RedHat's [KeyCloak](#) open-source authorization services offering [supports UMA2](#). Except for the interactive claims gathering flow, most of the specification is implemented, including resource registration. A simple example app (photoz) using UMA is [provided](#). The protection API has been [extended](#) to include a new endpoint to manage user permissions. This was a result of contributions from the community in order allow RSs to associate/manage custom policies for resources while still letting users manage them. While there isn't support for claims gathering, RSs are [allowed](#) to push claims when creating a permission ticket.

SMART project (non-healthcare-related)

This older Java implementation includes an [UMA/j](#) framework and sample applications. See the [SMART blog](#). The OAuth portion, originally named [leeloo](#), was contributed to Apache Amber (now Apache [Oltu](#), which is going to include OpenID Connect and good JWT support too). Part the SMART project involves development of set of open-source Python libraries, called [Puma](#), for UMA-enabling web apps to become UMA resource servers and clients. Note that this SMART project is distinct from the [SMART health IT](#) initiative.

Synergetics

The company [Cloud Identity Limited](#) (since acquired by [Synergetics](#)) developed an UMA Authorization Server - [NuveAM \(Online Demo\)](#). NuveAM implements the UMA protocol and supports other open standards including OAuth 2.0, OpenID Connect, and SAML 2.0. The company also developed Java and Python SDKs. More information is on the company's website and the company's [YouTube channel](#). The company integrated UMA with its [NuveLogin](#) service to simplify the flow for Resource Server and Client applications.

Telia

The Telia telecom company has an [identity solution](#) that provides UMA support.

Universidad de Alcalá Telematic Services Engineering Group

This Python implementation, part of the European Union-funded project [SITAC](#), focuses on IoT use cases. See a video [here](#).