HEART Testing

What's this about?

From http://openid.net/wg/heart/,
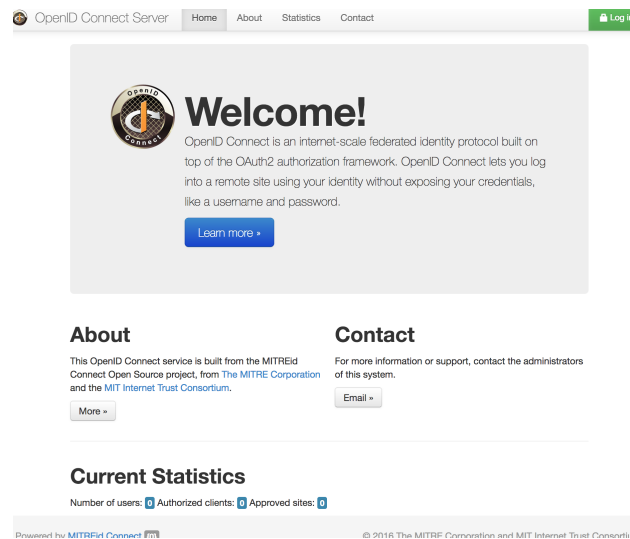
> The HEART Working Group intends to harmonize and develop a set of privacy and security specifications that enable an individual to control the authorization of access to RESTful health-related data sharing APIs, and to facilitate the development of interoperable implementations of these specifications by others.

Reference implementation

According to https://bitbucket.org/openid/heart/wiki/Home,

> MITREid Connect is an open source reference implementation of OpenID Connect and OAuth 2.0 from the MITRE Corporation and MIT Internet Trust Consortium (ITC).

While MITREid Connect does not specifically mention HEART, we assume it's appearance under the "reference implementation" section of the HEART Working Group Wiki implies it is fully HEART compliant.
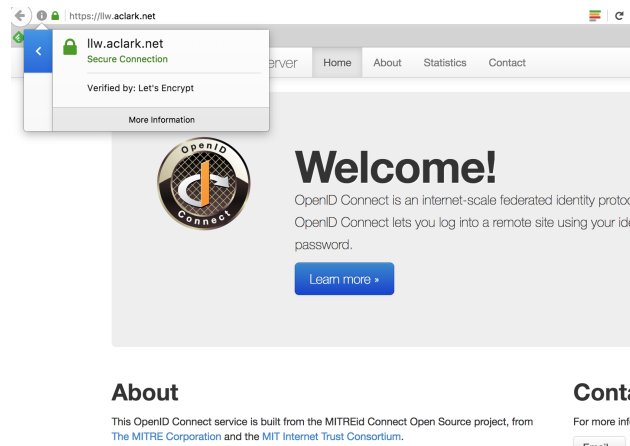
Endpoints

According to https://github.com/mitreid-connect/OpenID-Connect-Java-Spring-Server/wiki/Server-configuration#endpoints, a HEART-compliant server should offer the following endpoints:

- Authorization endpoint: /authorize
- Token endpoint: /token
- Token introspection: /introspect
- Token revocation: /revoke
- JSON Web Key Set (public key): /jwk
- User info: /userinfo
- Provider configuration: /.well-known/openid-configuration

SSL

As SSL is a requirement, we have configured a free certificate from Let's Encrypt

Testing

Here we confirm our MITREid-Connect server offers the specified endpoints.

Authorization endpoint: /authorize

TODO

Token endpoint: /token

> ### *Warning*
>
> This request made anonymously.

```
curl https://llw.aclark.net/token | jq
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100    71    0    71    0     0    106      0 --:--:-- --:--:-- --:--:--   106
{
  "error": "invalid_client",
  "error_description": "Bad client credentials"
}
```

Token introspection: /introspect

> ### *Warning*
>
> This request made anonymously.

Token revocation: /revoke

> **Warning**
>
> This request made anonymously.

JSON Web Key Set (public key): /jwk

```
$ curl https://llw.aclark.net/jwk | jq
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   411  100   411    0     0   1138      0 --:--:-- --:--:-- --:--:--  1141
{
  "keys": [
    {
      "kty": "RSA",
      "e": "AQAB",
      "kid": "rsa1",
      "alg": "RS256",
      "n": "qt6yOiI_wCoCVlGO0MySsez0VkSqhPvDl3rfabOslx35mYEO-n4ABfIT5Gn2zN-CeIcOZ5ugAXvI
    }
  ]
}
```

User info: /userinfo

> **Warning**
>
> This request made anonymously.

```
$ curl https://llw.aclark.net/userinfo | jq
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   102    0   102    0     0    200      0 --:--:-- --:--:-- --:--:--   200
{
  "error": "unauthorized",
  "error_description": "Full authentication is required to access this resource"
}
```

Provider configuration: /.well-known/openid-configuration

```
$ curl https://llw.aclark.net/.well-known/openid-configuration | jq
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  2829  100  2829    0     0   2540      0  0:00:01  0:00:01 --:--:--  2541
{
  "request_parameter_supported": true,
  "claims_parameter_supported": false,
  "introspection_endpoint": "https://llw.aclark.net/introspect",
  "scopes_supported": [
    "openid",
    "profile",
    "email",
    "address",
    "phone",
    "offline_access"
  ],
  "issuer": "https://llw.aclark.net/",
  "userinfo_encryption_enc_values_supported": [
    "A256CBC+HS512",
    "A256GCM",
    "A192GCM",
    "A128GCM",
    "A128CBC-HS256",
    "A192CBC-HS384",
    "A256CBC-HS512",
    "A128CBC+HS256"
  ],
  "id_token_encryption_enc_values_supported": [
    "A256CBC+HS512",
    "A256GCM",
    "A192GCM",
    "A128GCM",
    "A128CBC-HS256",
    "A192CBC-HS384",
    "A256CBC-HS512",
    "A128CBC+HS256"
  ],
  "authorization_endpoint": "https://llw.aclark.net/authorize",
  "service_documentation": "https://llw.aclark.net/about",
  "request_object_encryption_enc_values_supported": [
    "A256CBC+HS512",
    "A256GCM",
    "A192GCM",
    "A128GCM",
    "A128CBC-HS256",
    "A192CBC-HS384",
    "A256CBC-HS512",
    "A128CBC+HS256"
  ],
  "userinfo_signing_alg_values_supported": [
    "HS256",
    "HS384",
    "HS512",
    "RS256",
```

```json
      "RS384",
      "RS512",
      "ES256",
      "ES384",
      "ES512",
      "PS256",
      "PS384",
      "PS512"
    ],
    "claims_supported": [
      "sub",
      "name",
      "preferred_username",
      "given_name",
      "family_name",
      "middle_name",
      "nickname",
      "profile",
      "picture",
      "website",
      "gender",
      "zoneinfo",
      "locale",
      "updated_at",
      "birthdate",
      "email",
      "email_verified",
      "phone_number",
      "phone_number_verified",
      "address"
    ],
    "claim_types_supported": [
      "normal"
    ],
    "op_policy_uri": "https://llw.aclark.net/about",
    "token_endpoint_auth_methods_supported": [
      "client_secret_post",
      "client_secret_basic",
      "client_secret_jwt",
      "private_key_jwt",
      "none"
    ],
    "token_endpoint": "https://llw.aclark.net/token",
    "response_types_supported": [
      "code",
      "token"
    ],
    "request_uri_parameter_supported": false,
    "userinfo_encryption_alg_values_supported": [
      "RSA-OAEP",
      "RSA-OAEP-256",
      "RSA1_5"
    ],
    "grant_types_supported": [
      "authorization_code",
      "implicit",
```

```json
    "urn:ietf:params:oauth:grant-type:jwt-bearer",
    "client_credentials",
    "urn:ietf:params:oauth:grant_type:redelegate"
  ],
  "revocation_endpoint": "https://llw.aclark.net/revoke",
  "userinfo_endpoint": "https://llw.aclark.net/userinfo",
  "token_endpoint_auth_signing_alg_values_supported": [
    "HS256",
    "HS384",
    "HS512",
    "RS256",
    "RS384",
    "RS512",
    "ES256",
    "ES384",
    "ES512",
    "PS256",
    "PS384",
    "PS512"
  ],
  "op_tos_uri": "https://llw.aclark.net/about",
  "require_request_uri_registration": false,
  "code_challenge_methods_supported": [
    "plain",
    "S256"
  ],
  "id_token_encryption_alg_values_supported": [
    "RSA-OAEP",
    "RSA-OAEP-256",
    "RSA1_5"
  ],
  "jwks_uri": "https://llw.aclark.net/jwk",
  "subject_types_supported": [
    "public",
    "pairwise"
  ],
  "id_token_signing_alg_values_supported": [
    "HS256",
    "HS384",
    "HS512",
    "RS256",
    "RS384",
    "RS512",
    "ES256",
    "ES384",
    "ES512",
    "PS256",
    "PS384",
    "PS512",
    "none"
  ],
  "registration_endpoint": "https://llw.aclark.net/register",
  "request_object_signing_alg_values_supported": [
    "HS256",
    "HS384",
    "HS512",
```

```
    "RS256",
    "RS384",
    "RS512",
    "ES256",
    "ES384",
    "ES512",
    "PS256",
    "PS384",
    "PS512"
  ],
  "request_object_encryption_alg_values_supported": [
    "RSA-OAEP",
    "RSA-OAEP-256",
    "RSA1_5"
  ]
}
```