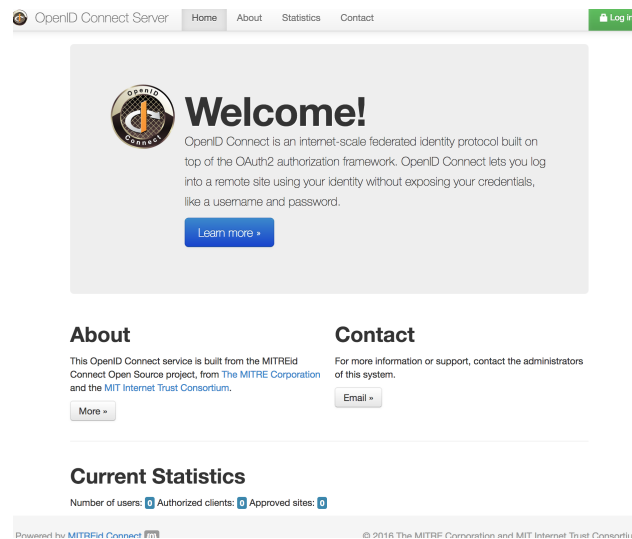


# HEART Testing



## 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.

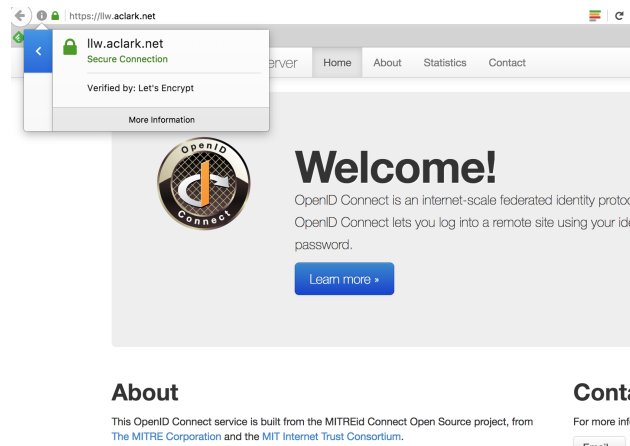
## Endpoints

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

#### **Note**

Authenticated requests not supported yet.

### Token endpoint: /token

#### **Note**

Authenticated requests not supported yet.

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

### Token introspection: /introspect

### Note

Authenticated requests not supported yet.

```
curl https://llw.aclark.net/introspect | jq
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           %         0         0             Dload  Upload  Total  Spent  Left  Speed
100    71      0    71      0      0    121      0 --:--:-- --:--:-- --:--:--   121
{
  "error": "invalid_client",
  "error_description": "Bad client credentials"
}
```

## Token revocation: /revoke

### Note

Authenticated requests not supported yet.

```
curl https://llw.aclark.net/revoke | jq
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           %         0         0             Dload  Upload  Total  Spent  Left  Speed
100    71      0    71      0      0    120      0 --:--:-- --:--:-- --:--:--   120
{
  "error": "invalid_client",
  "error_description": "Bad client credentials"
}
```

## JSON Web Key Set (public key): /jwk

```
$ curl https://llw.aclark.net/jwk | jq
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           %         0         0             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_wCoCVlGO0MySsez0VksqhpVd13rfabOslx35mYEO-n4ABfIT5Gn2zN-CeIcOZ5ugAXvI"
    }
  ]
}
```

## User info: /userinfo

### Note

Authenticated requests not supported yet.

```
$ 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"
  ]
}
```

```
"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",
```

```
    "urn:ietf:params:oauth:grant-type:jwt-bearer",
    "client_credentials",
    "urn:ietf:params:oauth:grant_type:redelagate"
  ],
  "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"  
  ]  
}
```

## Todo

- Add more documentation.
- Support authentication.
- Test use cases.