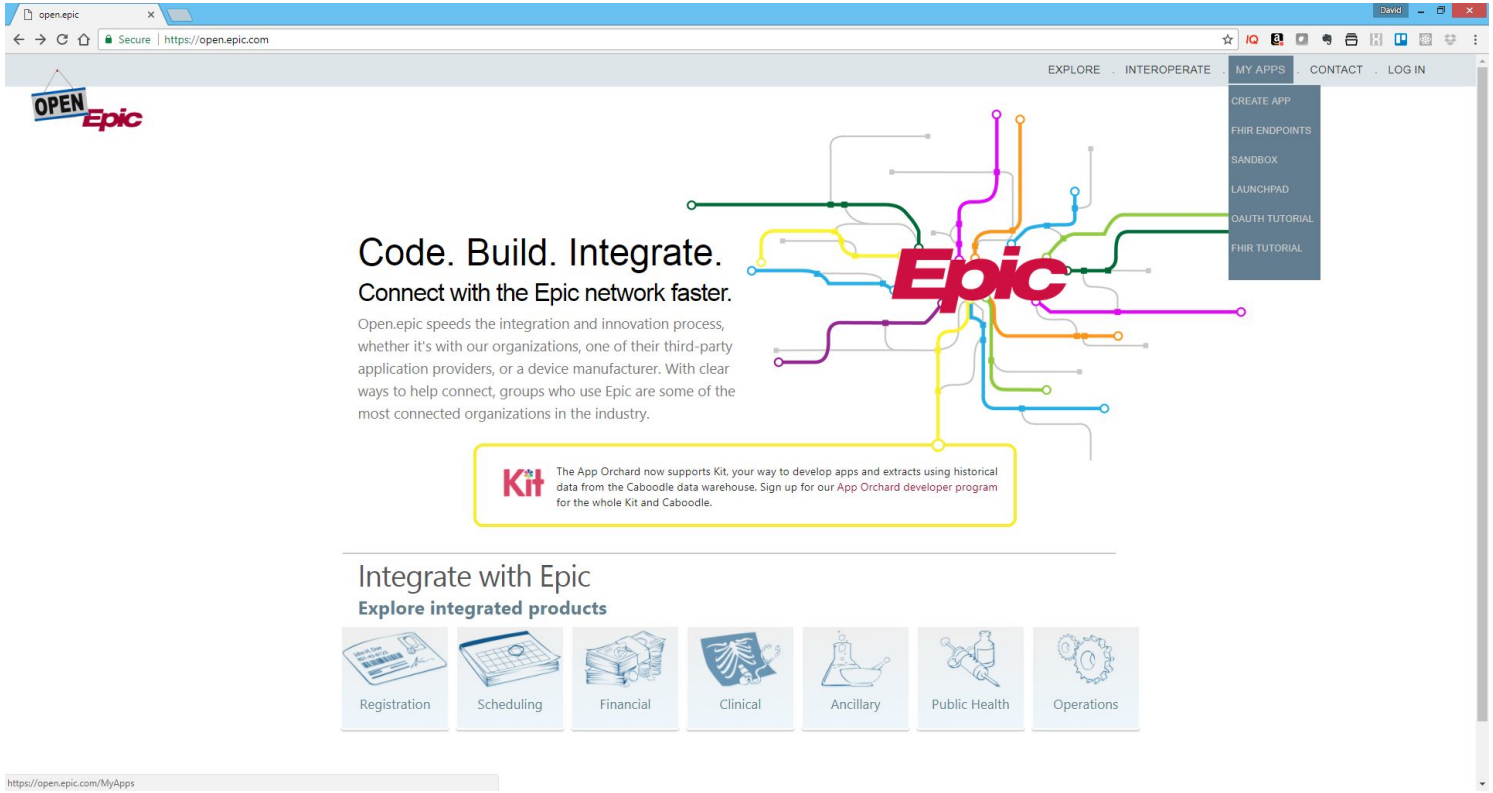
Smart FHIR
On Epic

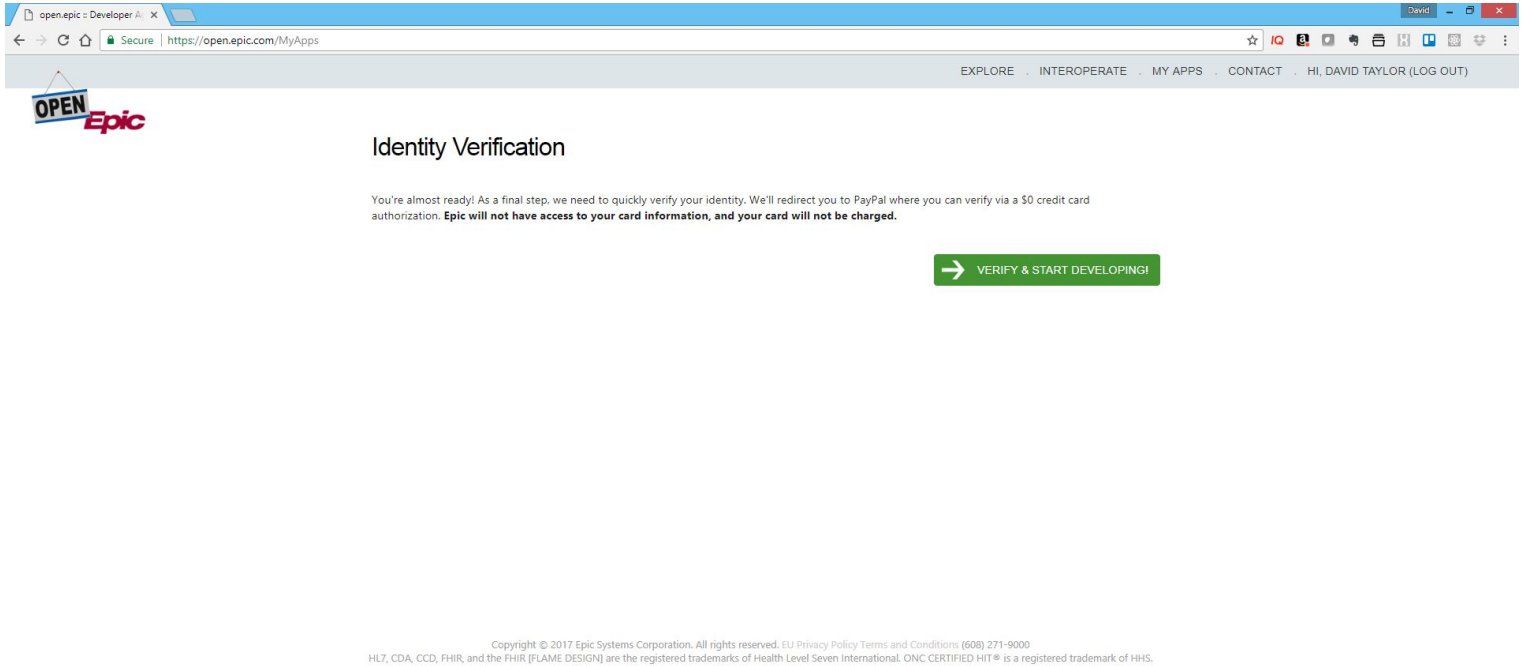
open.epic.com



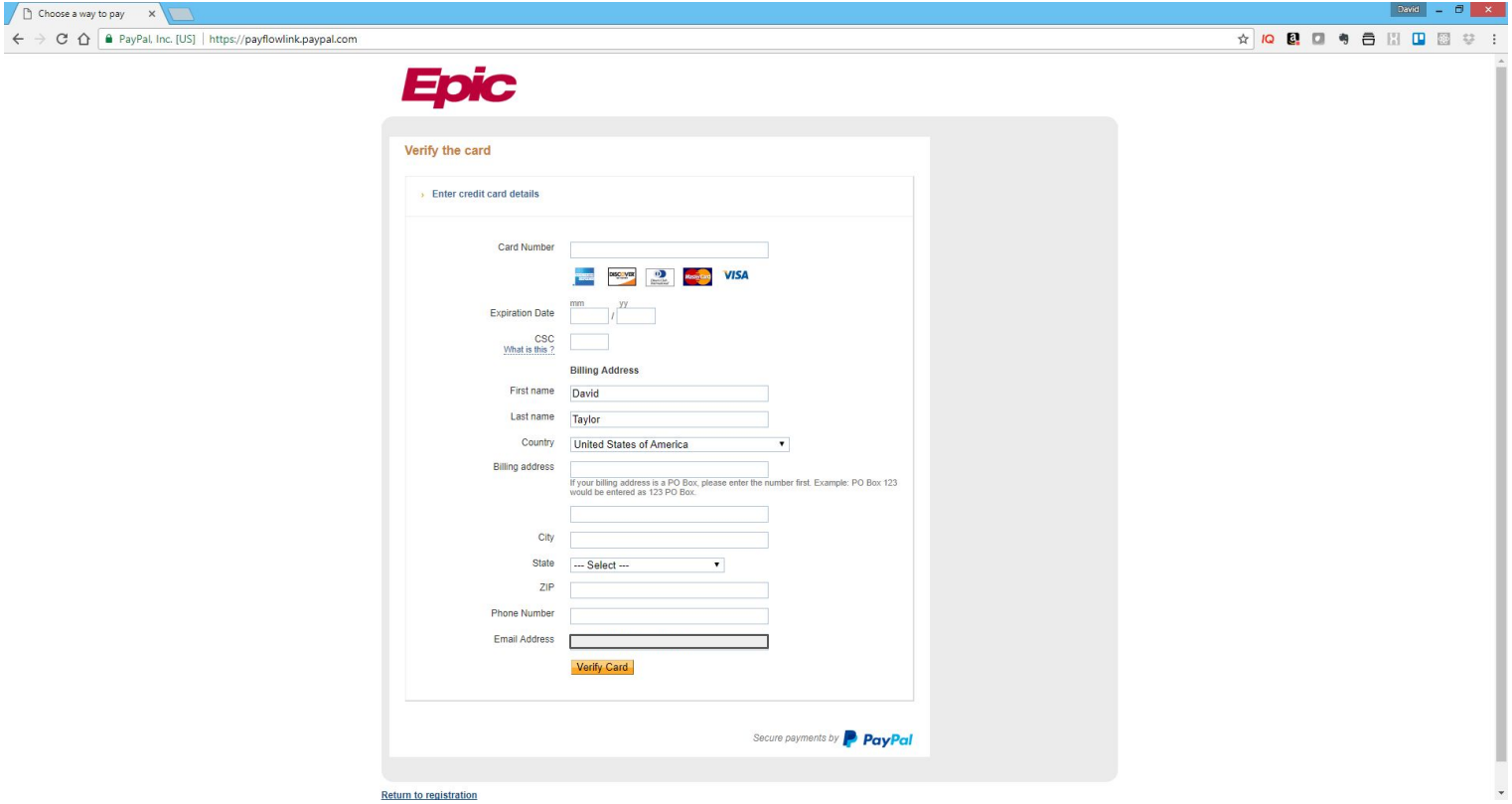
Choose Auth Method

- Choose from a number of OpenID options including Google and others

Verify Identity - Requests a Credit Card - but NOT Charged

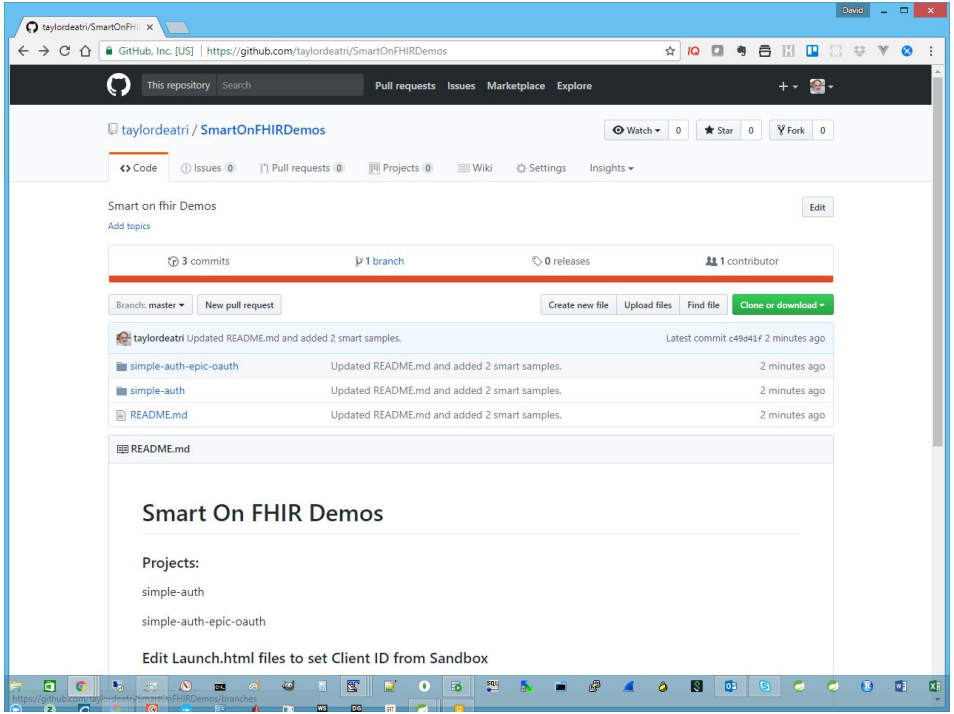


Fill out the form



Download Sample Apps from IndyFHIR Github

https://github.com/taylordeatri/SmartOnFHIRDemos

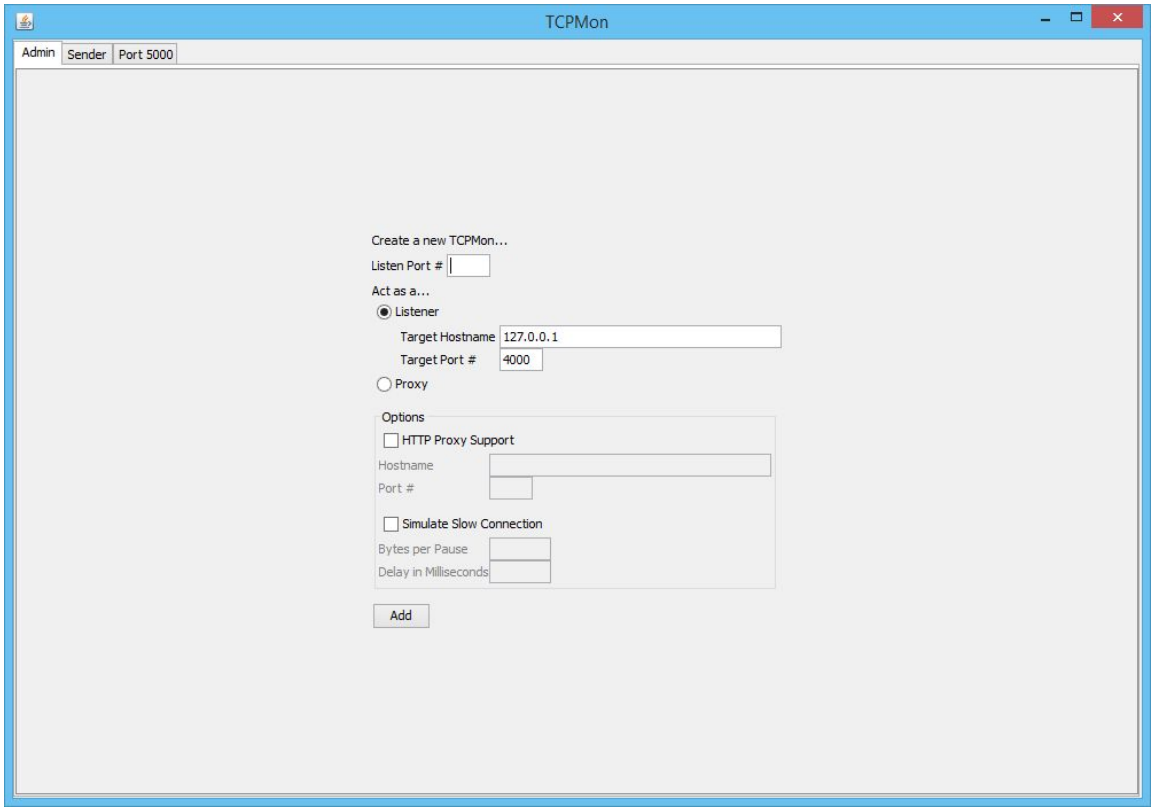


Download tcpMon or other proxy tool

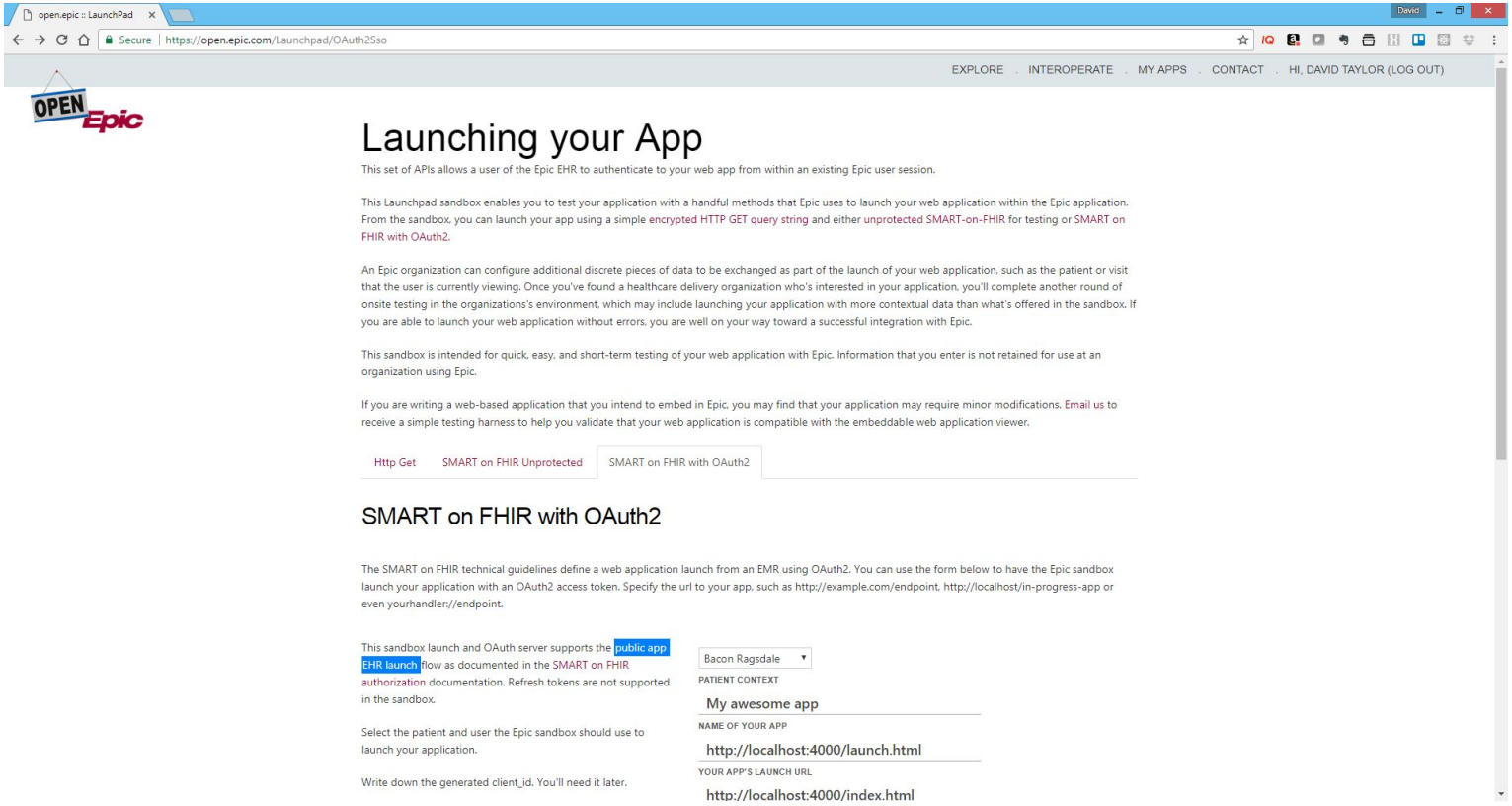
http://archive.apache.org/dist/ws/tcpmon/1.0/

- Download tcpmon-1.0-bin
- unzip
- cd tcpmon-1.0-bin/build
- Run tcpmon.bat
- Configure Listener:

Configure tcpmon Admin - Listener then (Add)



Goto Epic Launch Pad



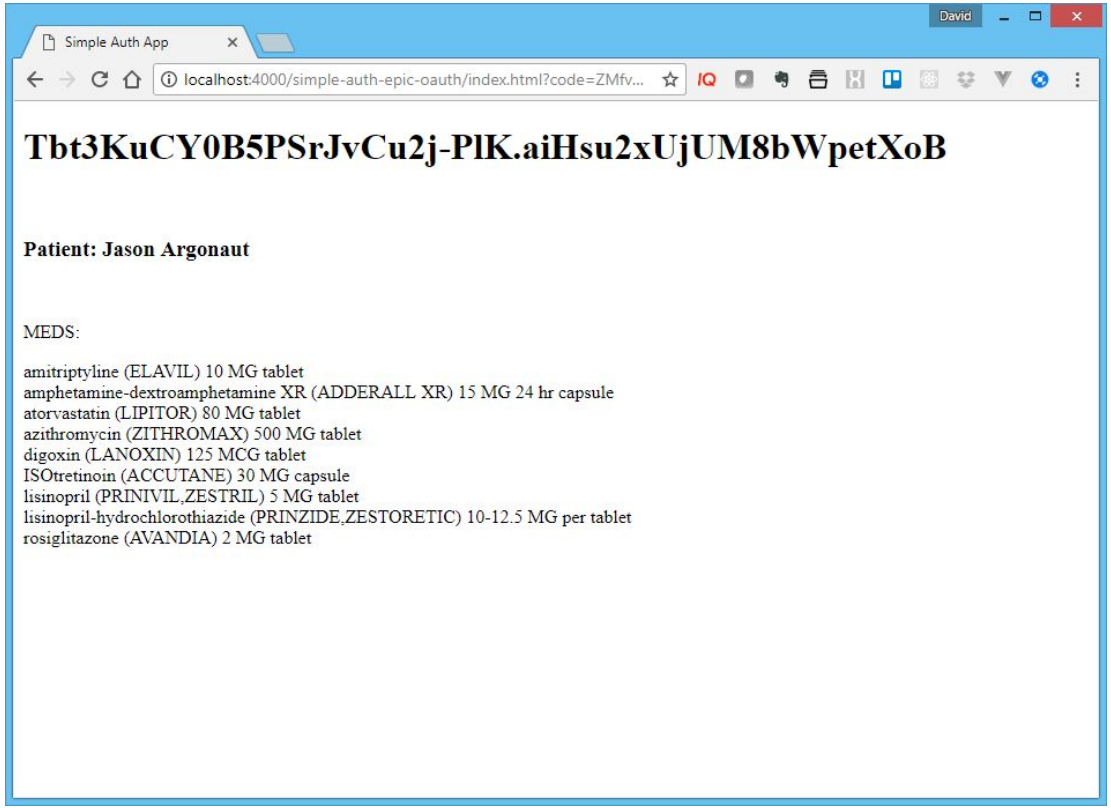
Message / URL Exchanges

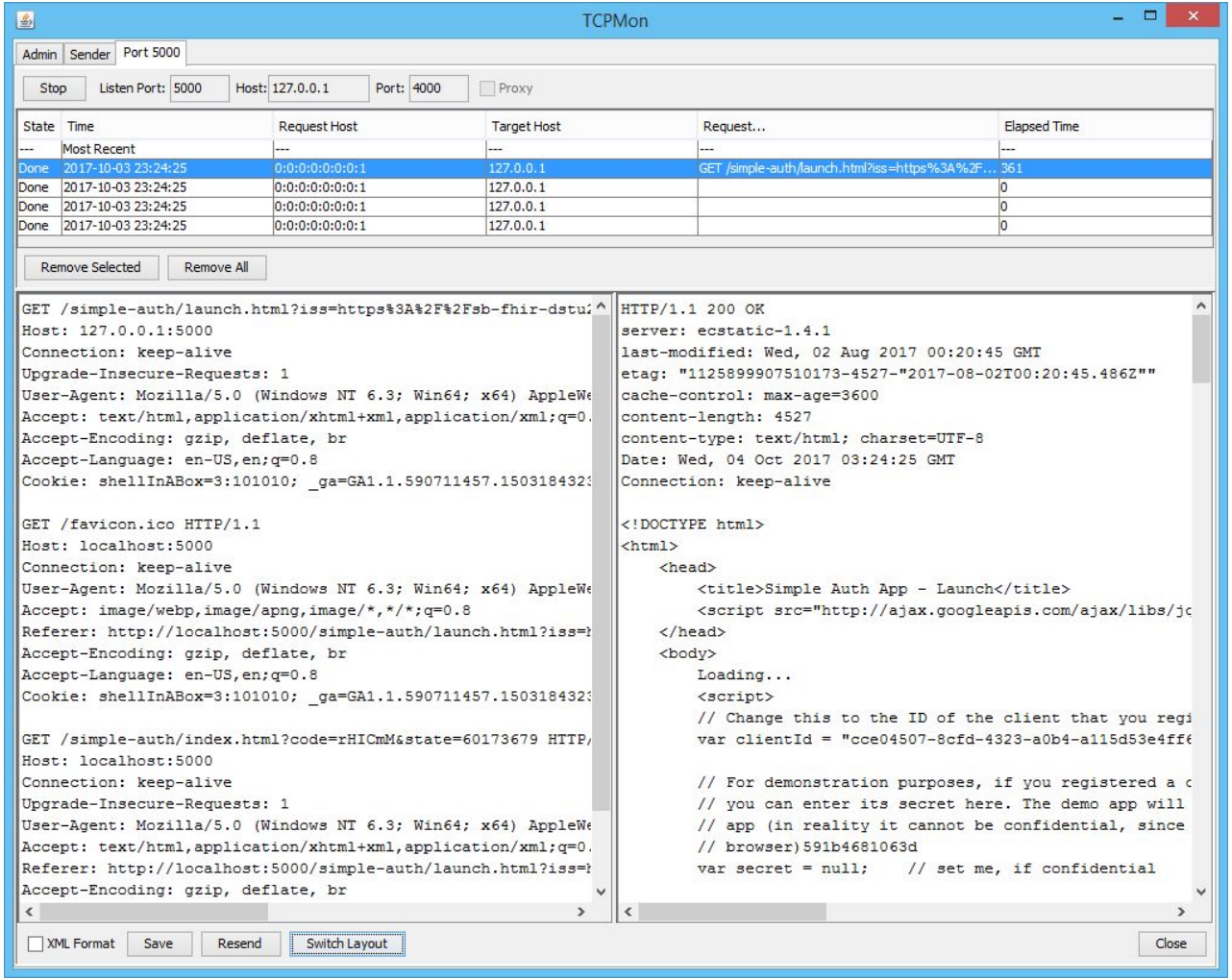
1. Epic will open your web app's launch URL with at least two URL parameters:
    - **launch** contains a SMART on FHIR **launch token**
    - **iss** contains Epic's base FHIR server URL
2. Your web application should query Epic's FHIR server's metadata endpoint (https://open-ic.epic.com/Argonaut/api/FHIR/Argonaut/metadata) to find Epic's OAuth2 authorization and token endpoints.
3. In order to bind your web app's session with the existing end-user's EHR session, your app should redirect the browser to the Epic OAuth authorization endpoint with the following parameters:
    - response_type = "code"
    - client_id = client_id (defined above)
    - redirect_uri = redirect_url (defined in the above form)
    - launch = the launch token (as passed to your web app's launch URL)
    - state = <an opaque value used by the client to maintain state between the request and callback.>
4. Epic will then redirect to your provided redirect URL with an authorization *code* and the *state* parameter you provided.
5. Your web app should exchange the authorization code for an access token by posting the following parameters to Epic's OAuth token service:
    - grant_type = "authorization_code"
    - code = the authorization code your web app received
    - redirect_uri = redirect_url (defined in the above form)
    - client_id = client_id (defined in the above form)
6. Epic will return an access_token.
7. Your web app can use the time-limited access token to access Epic FHIR resources. Include the token as a "Bearer" token in the Authorization HTTP header as part of your RESTful queries.

Modify the smarthealthit.org Sample Simple Auth

- Go to LaunchPad
- Select Oauth2 Tab
- Select Patient
- Configure URLs - Use TCPMonitor Listener Port
  - Enter Launch URL: http://localhost:<port>/simple-auth-epic-oauth/launch.html
  - Enter Redirect URL: http://localhost:<port>/simple-auth-epic-oauth/index.html
- Set ClientId that i shown on the LaunchPad page
- Start http-server -p <port#>
- Click the LAUNCH button back on the open.epic page

Result of launch




TCPMon
Admin
Sender
Port 5000
Stop
Listen Port: 5000
Host: 127.0.0.1
Port: 4000
Proxy
State
Time
Request Host
Target Host
Request...
Elapsed Time
--- Most Recent --- --- --- ---
Done 2017-10-03 23:24:25 0:0:0:0:0:0:0:1 127.0.0.1 GET /simple-auth/launch.html?iss=https%3A%2F... 361
Done 2017-10-03 23:24:25 0:0:0:0:0:0:0:1 127.0.0.1 0
Done 2017-10-03 23:24:25 0:0:0:0:0:0:0:1 127.0.0.1 0
Done 2017-10-03 23:24:25 0:0:0:0:0:0:0:1 127.0.0.1 0
Remove Selected
Remove All
GET /simple-auth/launch.html?iss=https%3A%2F%2Fsb-fhir-dstu
Host: 127.0.0.1:5000
Connection: keep-alive
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 6.3; Win64; x64) AppleWe
Accept: text/html,application/xhtml+xml,application/xml;q=0.
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.8
Cookie: shellInABox=3:101010; _ga=GA1.1.590711457.150318432
GET /favicon.ico HTTP/1.1
Host: localhost:5000
Connection: keep-alive
User-Agent: Mozilla/5.0 (Windows NT 6.3; Win64; x64) AppleWe
Accept: image/webp,image/apng,image/*,*/*;q=0.8
Referer: http://localhost:5000/simple-auth/launch.html?iss=
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.8
Cookie: shellInABox=3:101010; _ga=GA1.1.590711457.150318432
GET /simple-auth/index.html?code=rHICmM&state=60173679 HTTP/
Host: localhost:5000
Connection: keep-alive
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 6.3; Win64; x64) AppleWe
Accept: text/html,application/xhtml+xml,application/xml;q=0.
Referer: http://localhost:5000/simple-auth/launch.html?iss=
Accept-Encoding: gzip, deflate, br
HTTP/1.1 200 OK
server: ecstatic-1.4.1
last-modified: Wed, 02 Aug 2017 00:20:45 GMT
etag: "1125899907510173-4527-"2017-08-02T00:20:45.486Z""
cache-control: max-age=3600
content-length: 4527
content-type: text/html; charset=UTF-8
Date: Wed, 04 Oct 2017 03:24:25 GMT
Connection: keep-alive
<!DOCTYPE html>
<html>
<head>
<title>Simple Auth App - Launch</title>
<script src="http://ajax.googleapis.com/ajax/libs/jq
</head>
<body>
Loading...
<script>
// Change this to the ID of the client that you regi
var clientId = "cce04507-8cfd-4323-a0b4-a115d53e4ff6
// For demonstration purposes, if you registered a c
// you can enter its secret here. The demo app will
// app (in reality it cannot be confidential, since
// browser)591b4681063d
var secret = null; // set me, if confidential
XML Format
Save
Resend
Switch Layout
Close

Launch.html with **iss** and **launch**

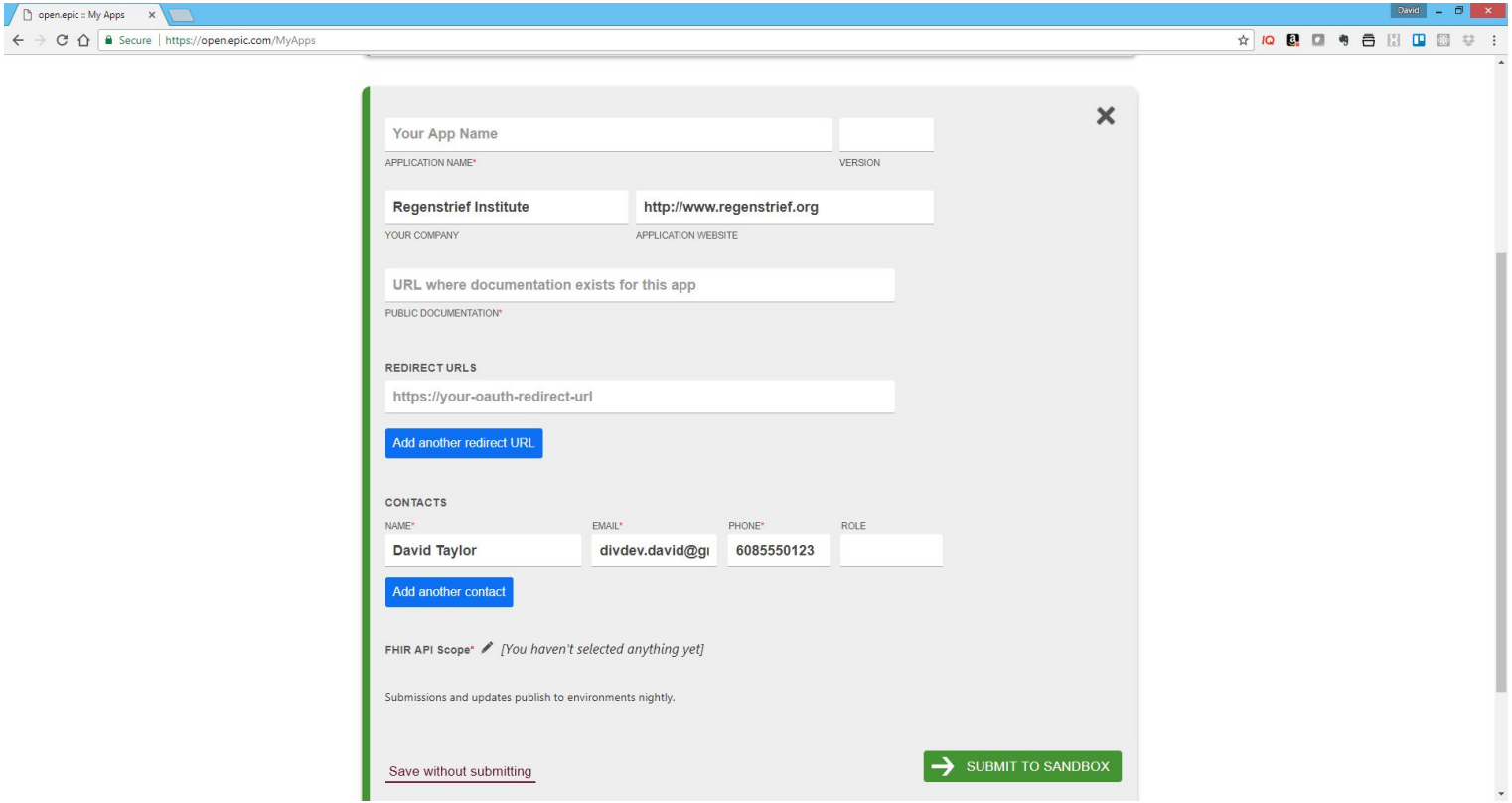
GET
/simple-auth/launch.html?iss=https%3A%2F%2Fsb-fhir-dstu2.smarthealthit.org%2Fsmartdstu2%2Fdata&launch=sS7L2g HTTP/1.1
Host: 127.0.0.1:5000
Connection: keep-alive
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 6.3; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/61.0.3163.100 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.8
Cookie: shellInABox=3:101010; _ga=GA1.1.590711457.1503184323

Index.html request with code

GET **/simple-auth/index.html?code=rHlCmM&state=60173679 HTTP/1.1**
Host: localhost:5000
Connection: keep-alive
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 6.3; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/61.0.3163.100 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8
Referer: http://localhost:5000/simple-auth/launch.html?iss=https%3A%2F%2Fsb-fhir-dstu2.smarthealthit.org%2Fsmartdstu2%2Fdata&launch=sS7L2g
Accept-Encoding: gzip, deflate, br
Accept-Language: en-US,en;q=0.8
Cookie: shellInABox=3:101010; _ga=GA1.1.590711457.1503184323

Homework

- Add more Epic FHIR Resources
  - Procedures
  - Conditions
  - Observations
  - DiagnosticReport
  - Immunization
  - Allergy
  - etc.

Questions

Fill Out Application Form