Getting Started

Touchstone Registration &
Setup
Touchstone

• Is available as a publicly accessible cloud-based testing platform
  – Touchstone.com

• Provides automated, internet-based interoperability testing of the HL7® FHIR® specification (and including CDS-Hooks)

• Tests the capabilities of and interoperability between both FHIR Server and Client implementations

• Allows easy access to test your server, a known server, or to test your client implementation
Touchstone is an infrastructure as a Service (IaaS) and Testing as a Service (TaaS) Open Access Solution for health information exchange. Touchstone strives to live up to its dictionary definition - a criterion for determining the quality or genuineness of a thing - by offering thousands of tests in an easy-to-use system for determining a test system's conformance and interoperability against published specifications, standards, and profiles, including templates and implementation guides.

Touchstone...
- allows for automated, internet-based interoperability testing against the HL7 FHIR specifications and standards.
- tests interoperably with other FHIR Server and FHIR Client implementations.
- has been engineered from the ground up to leverage the new FHIR Textscript resource.
- is a blend between Test-Driven-Development (TDD) methodologies and Natural Language Processing (NLP) test scripts.
- has been featured at HL7 FHIR Connections and is being leveraged in a continuous testing environment by numerous leading HL7 FHIR implementers.
- plays an active role in the HL7 Conformance Testing community, the HL7 Argonaut Project, and the HSFIC Implementation community.

Features include...
- self-registration of user accounts and organizations.
- test scripts against test systems with Touchstone serving as the initiator of message exchanges.
- test scripts against test systems with Touchstone serving as the intermediary.
- server configuration of test scripts as named "test templates" for re-execution.
- control access to test scripts, test systems, and test results at the user, organization, and organization group levels.

Touchstone Updates
- Touchstone 4.0.0 and Testscript Editor 1.2.1 Released
- Touchstone 4.0.0 and Testscript Editor 1.2.1 Released

Help and Documentation
- How to register in Touchstone
- How to become a member of or create an organization
- How to approve an organization membership request
- How to create a test system
- How to execute test scripts
- How to use test scripts
- How to perform Conformance-based testing
- How to integrate Touchstone with CI including Jenkins
- How to reset my password

Feeds
- FHIR Testing Helps Healthcare Projects Accelerate Adoption
- AEGIS Engages with ONC FHIR Test Force
- Press Release: AEGIS Publishers FHIR Testing Study
- Healthcare Interoperability Testing with FHIR Just Got Easier
- FHIR Connection Links Health Technology Efforts From 17 Countries
- EHRs: A Shared Vision, Health Data for All, Aegis Cures
- DevGuys June 2018 Boston & Touchstone and FHIR Testing, Talk 2...
- Ready, FHIR, Test your sights on testing
- HL7 FHIR Connection #17 - Sat Morning Breakouts
- Touchstone and FHIR Testing at DevGuys 2017

Touchstone Totals
- Users: 1,912
- Organizations: 390
- Test Systems: 408
- Test Scripts: 4,909
- Tests: 22,773
- Test Script: 168,260
- Executions: 626,664
- Message Exchanges: 1,277,924

www.touchstone.com
Touchstone Landing Page

Touchstone Docs are available whether you are registered and logged in or just getting started.
Touchstone Landing Page

Please Sign In

carie.hammond@aegis.net

Password

Domain:
HL7 FHIR

Sign In

Don't have an account? Register
Forgot password? Reset Password
Getting Started with Touchstone

• All testing participants need to first Register with Touchstone
• Organizations may have 1 or more registered users on Touchstone (based on the organization’s subscription level)
• Registration and acceptance of registration must be completed before any testing can begin
• An organization will typically have at least 1 test system and may choose to run tests against other publicly available test systems
Register to use Touchstone

Upon entering Registration information successfully, users will receive this message & be allowed to either create a new ORG or join an existing ORG:

Organization Registration

- Become a member of an existing organization
- Create a new organization

Upon selection of your ORG, users will receive this message:
Create a Test System

• To run tests, a Test System must be defined
• From the top menu
  – Go to Test Systems
  – Select New Test System
• Once selected, a new entry for Test System will display
Create a Test System

- Enter name, base URL, IP addresses.
- Select OAuth2 if required
- Select who the Test System can be viewed by
- Select who can execute against the Test System
- Select who can modify the Test System
- Choose supported profiles from the available profiles

There is always online documentation to guide you along as well: https://touchstone.aegis.net/touchstone/userguide/html/test-systems/creating.html
Create a Test System
OAuth2 Support

• If your Test System requires an OAuth2 access token, select OAuth2 and enter the fields that will display once checked.

Requirements:
- OAuth2
  - OAuth2 Token Type *
    - Static Token
    - Dynamic Token
  - Click REFRESH to see endpoints saved from smart config

Authorization Endpoint:
http://example.com/oauth2
<table>
<thead>
<tr>
<th>Test System</th>
<th>Base URL</th>
<th>Delete</th>
<th>Domain</th>
<th>Conformance</th>
<th>Formats</th>
<th>Patch Formats</th>
<th>Supported Profiles</th>
<th>Created By</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMART on FHIR Open DSTU2 Server</td>
<td><a href="https://fhir-open-api.dstu2.smarthealthit.org">https://fhir-open-api.dstu2.smarthealthit.org</a></td>
<td>X</td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-SERVER</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR Argonaut FHIR-1.0-2</td>
<td><a href="http://argonaut.aegis.net/fhir/1-0-2">http://argonaut.aegis.net/fhir/1-0-2</a></td>
<td></td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR FHIR-1.0-2</td>
<td><a href="http://wildfhir.aegis.net/fhir/1-0-2">http://wildfhir.aegis.net/fhir/1-0-2</a></td>
<td>X</td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR FHIR-1.2-0</td>
<td><a href="http://wildfhir.aegis.net/fhir/1-2-0">http://wildfhir.aegis.net/fhir/1-2-0</a></td>
<td></td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR FHIR-1.4-0</td>
<td><a href="http://wildfhir.aegis.net/fhir/1-4-0">http://wildfhir.aegis.net/fhir/1-4-0</a></td>
<td></td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR FHIR-1.6-0</td>
<td><a href="http://wildfhir.aegis.net/fhir/1-6-0">http://wildfhir.aegis.net/fhir/1-6-0</a></td>
<td></td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR FHIR-1.8-0</td>
<td><a href="http://wildfhir.aegis.net/fhir/1-8-0">http://wildfhir.aegis.net/fhir/1-8-0</a></td>
<td></td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
<tr>
<td>WildFHIR FHIR-3.0-1</td>
<td><a href="http://wildfhir.aegis.net/fhir/3-0-1">http://wildfhir.aegis.net/fhir/3-0-1</a></td>
<td>X</td>
<td>HL7_FHIR</td>
<td>JSON, XML</td>
<td>FHIR-Server</td>
<td></td>
<td></td>
<td>Richard Eitema</td>
</tr>
</tbody>
</table>
How to Run a Test

- Navigate to the Test Definitions from the left menu and browse the tests available to you. Select to view the folder of tests you are interested in running.
How to Run a Test

- Select the Tests in the folder you plan to run – you can choose 1 or several
How to Run a Test

• Once selected, hit the Create Test Setup button and the tests will be readied for execution
  – Select the destination target server for the test (we chose the AEGIS Wildfhir Server, but you may select to run tests against your own server. That field is as drop-down of all available test servers)
  – Note one of these tests requires a variable to be filled in for the target system – in this case, we know we have a patient with the id ‘example’ in our testbed for our server, so we’ll type that in
How to Run a Test

- Now that the server is selected and any test variables needed are filled in, we hit Execute to run the test(s)
How to Run a Test

- The Test Execution page is brought up and we can watch the test run
How to Run a Test

- Once completed, the user can review the details of the test outcomes by using the Test Script Execution hyperlink OR by selecting the Status bars (Failed or Passed)
How to Run a Test

- The user can review even deeper details of the test outcomes by using the Test Name hyperlink OR by selecting the Status bars (Failed or Passed)
How to Run a Test

• Here we see the details of this test and find it was expecting a Bundle returned, which it did not get.

• As a user, I can look at the Response Body hyperlink in the test to see that my search for a particular clinical note resulted in no notes being returned, and thus failed.
Finding CARIN Tests in Touchstone

- The CARIN tests are provided free of charge in Touchstone and can be found here: FHIRSandbox/CARIN
- In the future as new CARIN scripts are added for new versions of IGs or for different CARIN IGs, you will find them under that parent ‘CARIN’ folder
Still need some help? Please see our extensive online documentation

or contact
Touchstone_Support@AEGIS.net