How to use clinFHIR Bundle Visualizer

Introduction

The bundle visualizer is designed to validate and view any conformant FHIR bundle. There are a number of views provided:
- The raw Json (XML can be imported, but will be converted to Json
- The individual entries in the bundle. Each entry has the following subviews:
  - The Json of the entry
  - A tree view of the resource within the entry
  - All the references (to and from the resource) as a graph. The graph can be filtered as follows
    - References from this resource to another
    - References from other resources to this one
    - 'Recursive' references - where the graph shows all references for resources in the graph - even those don't connect to the selected resource
  - Validation errors
- A graph showing all the resources in the bundle and their references
- Validation errors reported by the validation server.

If the bundle is a document, then there is a specific Document view.

Validation

Validation is performed by calling the $validate operation on the validation server. This (generally) uses the validation code supplied by the FHIR project. By default, the validation will be against the core specification, but if there is a one or more profiles in the resource meta element, then the validation will also include the constraints and extensions defined by those profiles.

The default value for the Validation server is the current conformance server - but can be changed to another. The changed server is recorded in the local browser database.

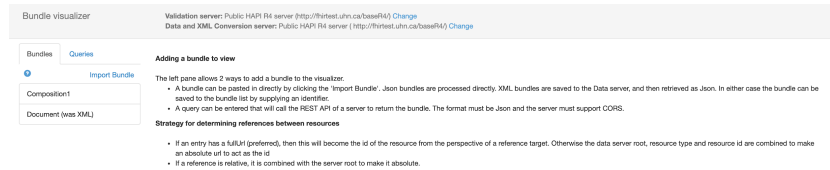For R4 use, that HAPI R4 server is recommended.

Guides

Starting the app

The url of the app is
http://clinfhir.com/bundleVisualizer.html.
When the app loads the following screen is
displayed.
- The left pane shows any bundles
  that have been added to the app, and allows new ones to be imported.
- The right pane is where the details of the currently selected bundle appear

Display a bundle that was previously imported and saved

These bundles (which are saved on the data server) are listed in the left pane. Clicking on the
bundle (or a query) will cause the bundle to be loaded.

When a bundle loads, the following occurs:
- The bundle is validated (using the Bundle/$validate operation on the validation server).
  Validation errors are displayed in the top tab as well as for each resource. These are the
  errors reported by the validation server, and may be cryptic!
- The app attempts to build a graph of all the resources. It does this by traversing each
  resource in the bundle looking for out-going resource references. If it finds one, then it
  will attempt to locate the referenced resource in the bundle. If one is going, then a line
  will appear in the graph. The following notes apply.
  - The resource id is either the value of the entry.fullUrl property (preferred) or
    constructed from the url of the current data server + the resource type + the
    resource id
  - If the reference is relative, then it is converted into an absolute one using the url
    of the data server.

Add a new bundle

There are 2 ways to add a bundle to the app.
- A bundle can be pasted in directly by clicking the 'Import Bundle'. Json bundles are
  processed directly. XML bundles are saved to the Data server, and then retrieved as
  Json. In either case the bundle can be saved to the bundle list by supplying an identifier.

- A query can be entered that will call the REST API of a server to return the bundle. The format must be Json and the server must support CORS.
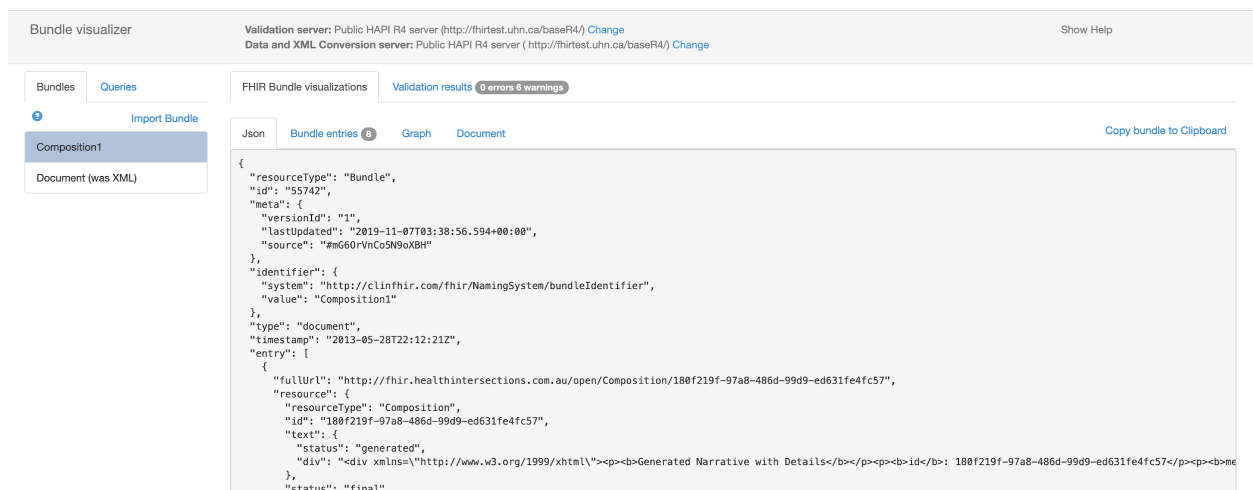
After adding a bundle, it is processed as described above.

Viewing the bundle

Once a bundle has been loaded, parsed and validated, the following views are available.

Json view

This is the raw json of the bundle

Bundle entries

This is a list of all entries in the bundle. Selecting a bundle displays the specific views of that entry / resource.

Bundle graph

All the references within the bundle. Selecting a resource in the graph shows the Json view of the entry containing the resource. (Useful to see what the fullUrl element is)

Bundle entries 8   Graph   Document   Copy bundle to Clipboard

```
{
  "fullUrl": "http://fhir.healthintersections.com.au/open/Patient/d1",
  "resource": {
    "resourceType": "Patient",
    "id": "d1",
    "text": {
      "status": "generated",
      "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">\n\n          <h1>Eve
    },
    "active": true,
    "name": [
      {
        "text": "Eve Everywoman",
        "family": "Everywoman1",
        "given": [
          "Eve"
        ]
      }
    ],
    "telecom": [
      {
        "system": "phone",
        "value": "555-555-2003",
        "use": "work"
      }
    ],
    "gender": "female",
    "birthDate": "1955-01-06",
    "address": [
      {
        "use": "home",
        "line": [
```

Document view

This view is derived from the bundle as described [in the spec](). Specifically:

- The text element of the Patient is shown
- The text element of the Composition is shown
- The text element of each section within the composition is shown. This is only the direct sections, not child sections.

Json | Bundle entries `8` | Graph | Document | Copy bundle to Clipboard

Subject

Eve Everywoman

Document metadata

Generated Narrative with Details

id: 180f219f-97a8-486d-99d9-ed631fe4fc57

meta:

status: final

type: Discharge Summary from Responsible Clinician (Details : {LOINC code '28655-9' = 'Physician attending Discharge summary)

encounter: http://fhir.healthintersections.com.au/open/Encounter/doc-example

date: 01/02/2013 12:30:02 PM

author: Doctor Dave

title: Discharge Summary

confidentiality: N

Reason for admission

Details
Acute Asthmatic attack. Was wheezing for days prior to admission.

Observation
Acute Asthmatic attack. Was wheezing for days prior to admission.

Medications on Discharge

Medication	Last Change	Last ChangeReason
Theophylline 200mg BD after meals	continued	
Ventolin Inhaler	stopped	Getting side effect of tremor

MedicationRequest
Theophylline 200mg twice a day

MedicationStatement
Ventolin inhaler discontinued