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NZ Health Terminology Service Connectathon

FHIR® Terminology Services

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Welcome!

- If you're in the wrong room there's still time to escape!
- Show of hands:
  - Have you been to a Connectathon before?
  - Are you a developer/technical?
  - Do you have your own scenario/problem ready to solve/discuss?
- Let's meet everyone
  - Where are you from?
  - What do you want to get out of today?
  - How do you want to use the terminology server?

- WIFI – UN: EEC, PW: 2022
- Connectathon App: https://hinzdigitalhealthweek22.zerista.com/native_app/store_url
- FHIR Server –
  - Temporary (until 16/12/2022) DEV/Connectathon: https://nz-connectathon.australiaeast.cloudapp.azure.com/fhir
  - PROD: https://nzhts.digital.health.nz/fhir

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NZHTS

NZ Health Terminology Service

Making it easy to use our standard terminologies and code sets for recording, using and sharing health information

Overview

https://www.tewhatuora.govt.nz/our-health-system/digital-health/terminology-service/

Syndication Endpoint

https://nzhts.digital.health.nz/synd/syndication.xml

FHIR® Endpoint

https://nzhts.digital.health.nz/fhir

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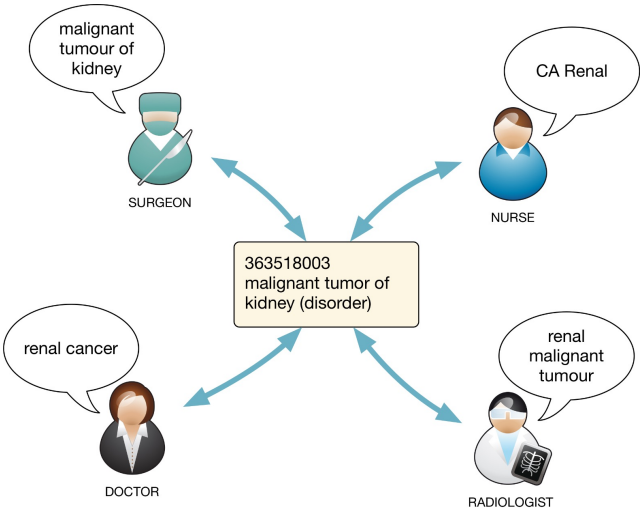
Why Use a Terminology Server?



Barrier

Time consuming and expensive for software vendors to maintain, and just another thing to manage for adopting organisations

Challenge

How can we drive consistent, meaningful use while reducing the burden on the software industry?

How can we support localisation to meet the needs of different health professionals across NZ?

Outcome

National terminologies adopted by all public and private healthcare organisations and their software providers

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What sort of terminologies?

- Whatever is nationally applicable, belongs in the national server
- More specialised terminologies may be kept in a terminology server that's targeted for that audience (please explain)
- Examples of terminology CodeSystems
  - AdministrativeGender
  - Agency type code
  - Registration Status of Practitioners
  - Level 4 ethnicity codes
  - NZ Residency status
  - MedDRA
  - Clinical coding system code
  - NZ Citizenship status
  - NZ Iwi
  - LOINC v2.73
  - SNOMED CT core

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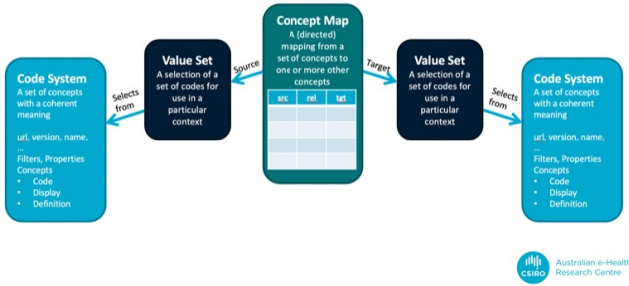
FHIR®

Fast Healthcare Interoperability Resources

FHIR Terminology – (simplified) big picture



Australian e-Health Research Centre

Terminology Resources

CodeSystem

Declares the existence of and describes a code system or code system supplement and its key properties, and optionally defines a part or all of its content. Also known as Ontology, Terminology, or Enumeration

ValueSet

A ValueSet resource instance specifies a set of codes drawn from one or more code systems, intended for use in a particular context. Value sets link between CodeSystem definitions and their use in coded elements

ConceptMap

A statement of relationships from one set of concepts to one or more other concepts - either concepts in code systems, or data element/data element concepts, or classes in class models.

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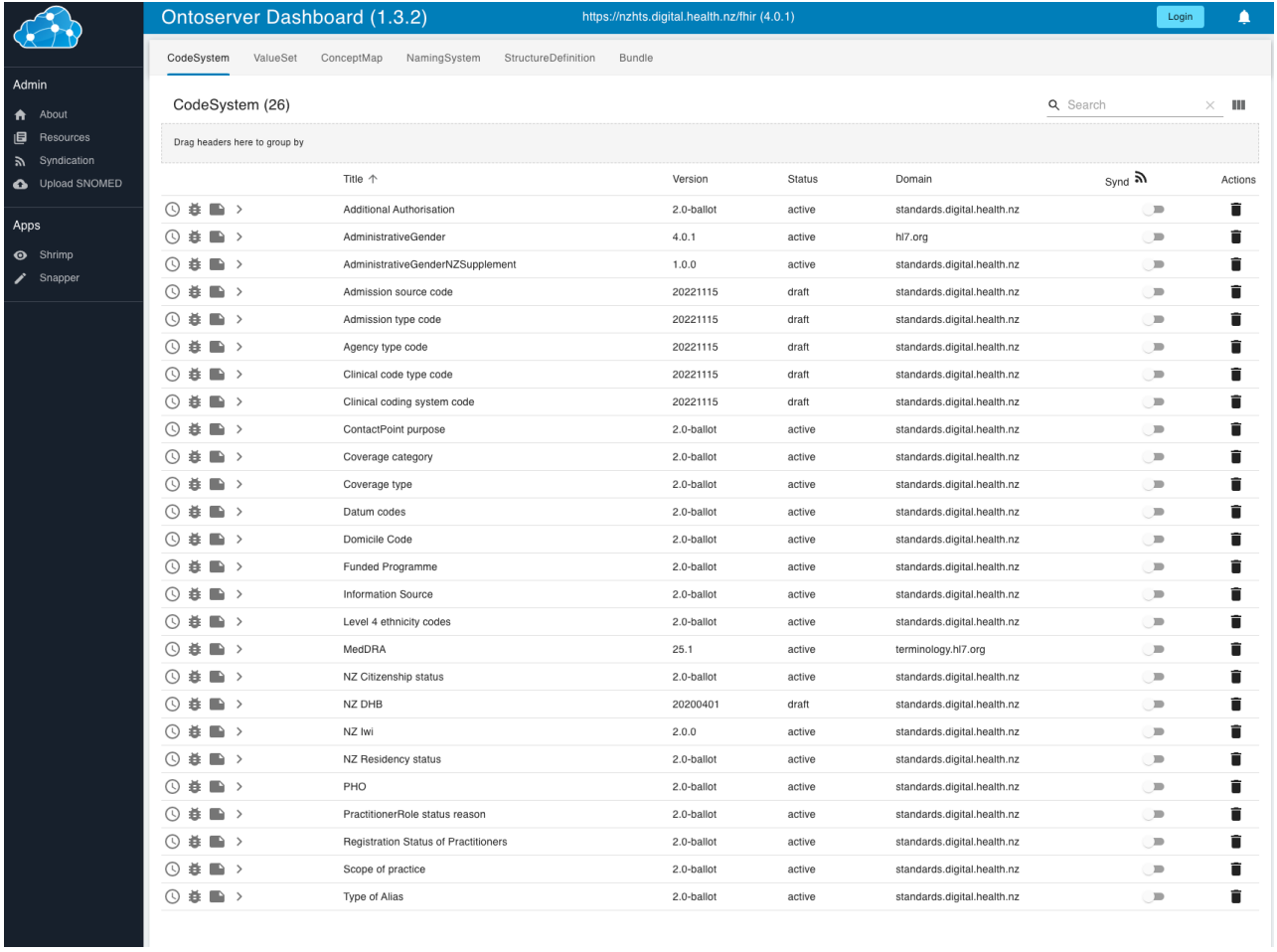
https://nzhts.digital.health.nz/fhir



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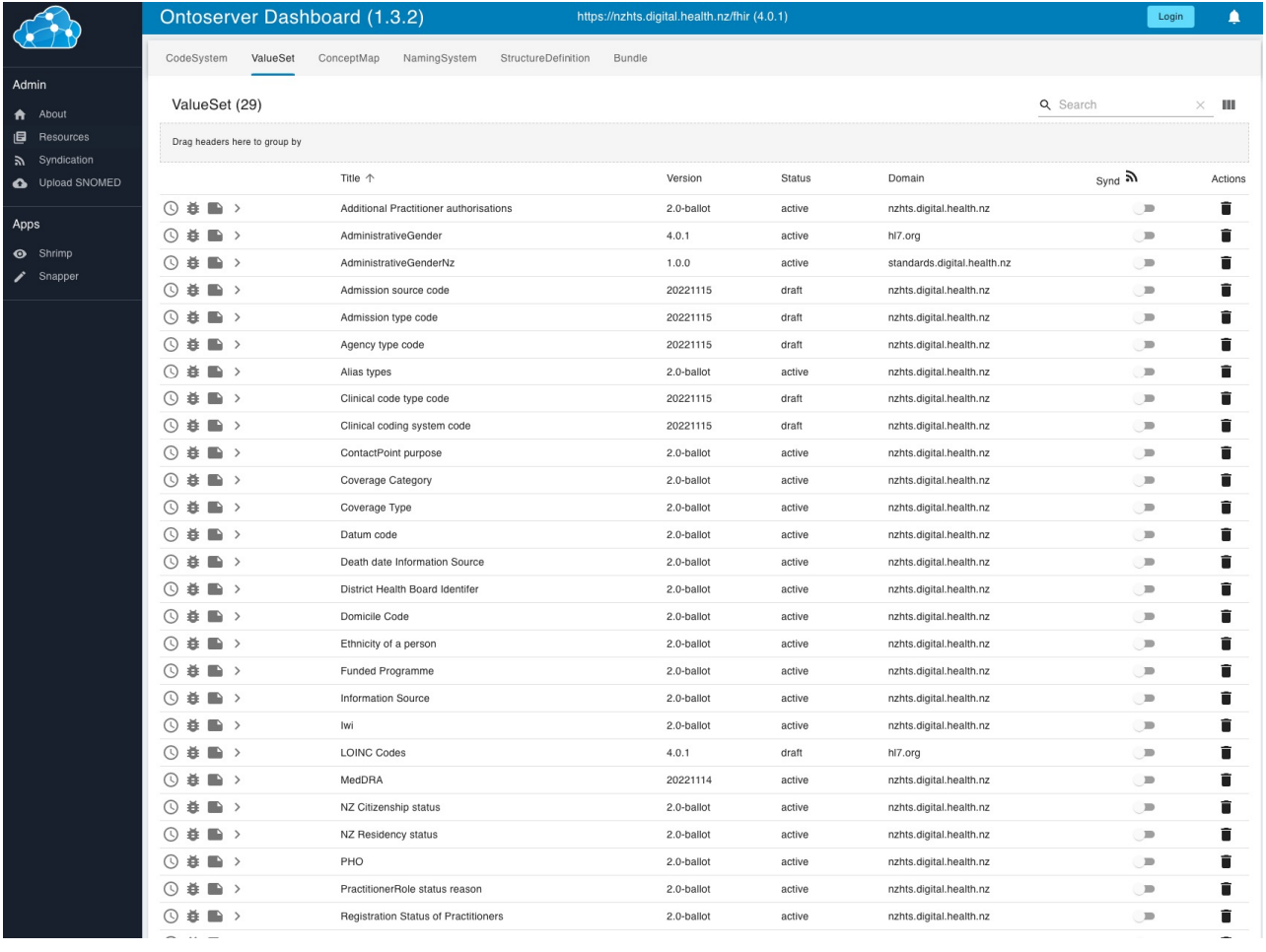

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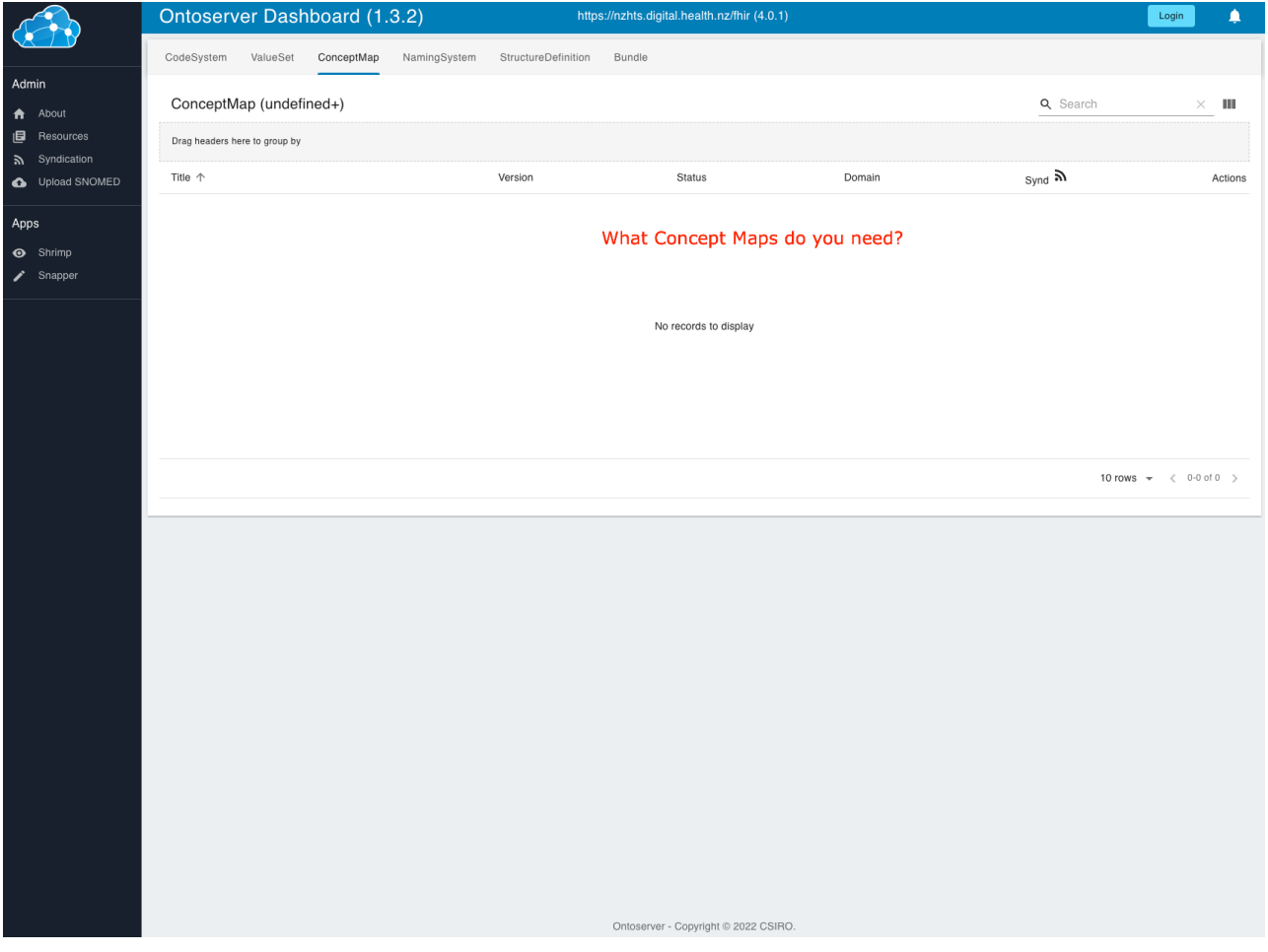

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$Operations? Example Please!

- ValueSet $expand (Implicit) – An expansion of SCT codes contained within a refset based ValueSet
- ValueSet $expand (composed) – A dynamic ValueSet, composed of codes that meet a definition provided by the client request
- CodeSystem $lookup – Lookup the definition of a code, within a specified CodeSystem
- ConceptMap $translate – Request the equivalent code in CodeSystem B, for the provided code in CodeSystem A, based on a ConceptMap within the terminology server
- ValueSet $validate-code – Verify that the provided code exists in the specified ValueSet

Working Example – NCTS, fhir-view

https://www.healthterminologies.gov.au/integration/R4/fhir/CodeSystem

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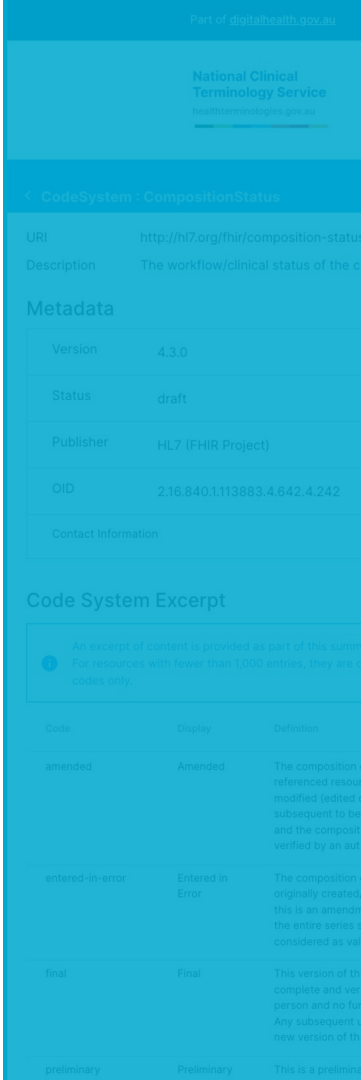
Why are you still here??

Go and look at the NCTS, as an example! Then you may return!



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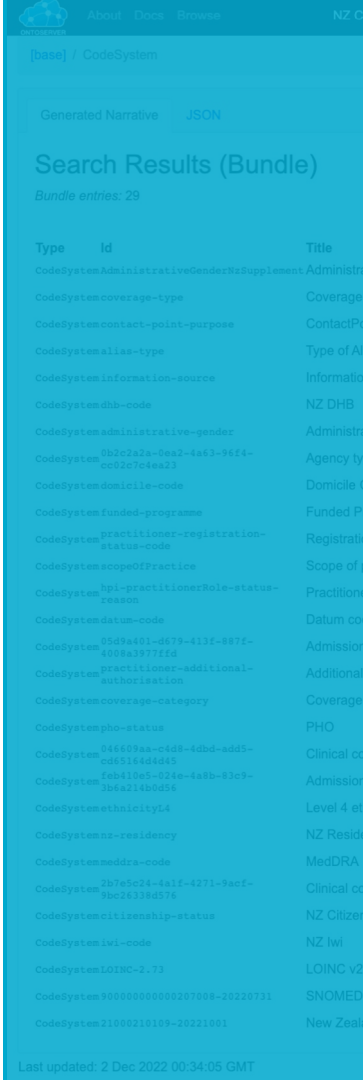
How about some NZHTS scenarios?!

Sure, but they sound like some great exercises for people at a connectathon…

- Search for or return all Level 4 ethnicity codes?
- List all active concepts within a specific SNOMED CT hierarchy
- $lookup a concept definition and decomposition
- Compose a ValueSet specific to some context
- Get back an NZ localised set of “administrative-gender” codes
- Return ONLY a specified set of properties for a ValueSet $expand
- Create a ConceptMap
- Search using the Expression Constraint Language (ECL)



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How to integrate with the NZHTS?

- Have a play! We've setup a temporary NZHTS clone at https://nz-connectathon.australiaeast.cloudapp.azure.com/fhir (NOTE: This connectathon server DOES NOT require auth)
- Most code systems in the REAL NZHTS do not require auth, although a handful do. The capability statement outlines security and auth endpoints. For more information look at https://www.tewhatuora.govt.nz/our-health-system/digital-health/terminology-service/
  - Yell out if you want to work out the auth configuration for the real thing. We'd be happy to help
- Work out your use-case and construct the request(s) to make it happen (I recommend using Postman, at design time)
- Work from examples (Ontoserver Postman collection, FHIR® spec, etc…)
- If you want to see real FHIR® requests (as an example), open up the developer console and fire up shrimp to see how it integrates
- FHIR® terminology servers can return both JSON and XML, depending on your preferred format
- HAPI is a versatile library that makes integration much easier, providing an API interface, in most common coding languages
- You may want to syndicate a binary index down to your own terminology server

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Resources

While not an exhaustive list the following will go a long way to you being successful with the NZHTS

- HL7 FHIR® specifications: https://www.hl7.org/fhir
- TA more in-depth overview of terminology servers, and FHIR®: https://confluence.hl7australia.com/download/attachments/114755103/TerminologyServices.pdf
- The FHIR® APIs are best explored using Postman (https://www.postman.com/downloads) or similar API development tool
- If using Postman, download our existing Postman collection from https://ontoserver.csiro.au/docs/6
- Integration walkthrough at Follow the Yellow Brick Code: https://www.youtube.com/watch?v=Q3qx0jh8x4k
- Example FHIR® implementation: https://www.healthterminologies.gov.au/integration/R4/fhir/
- Play with the SNOMED UI demonstrator to discover examples of how a UI might use the FHIR® Terminology Service API to support coded data entry (http://snomed.org/ui)
- Check out https://aehrc.github.io/fhir-ts-exemplars/ for some simplified examples
- For a deeper understanding, consider the SNOMED Terminology Services certification. It gives a thorough coverage of FHIR®, and SNOMED CT (https://courses.ihtsdotools.org/product?catalog=TSC)

Thank you

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