Software System Architectures (NSWI130)

Architectural Views

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Component-and-connector Viewpoint (C&C)

- show run-time elements and relationships between them
- **elements** = component and connectors
  - components represent runtime behavior
  - connectors are communication vehicles
- **relationships** = attachments of connectors to components

Why C&C Viewpoint

- What are the executing components and how do they interact?
- Which parts of the system are replicated?
- What parts of the system run in parallel?
- What are the shared data stores?
- How does data progress through the system?
- How can the system's structure change?

Why C&C Viewpoint

- Helps reason about runtime qualities.
  - availability
  - performance
  - security
  - …

National Open Data Catalog

Presentation

Public API

- Dataset List
- Dataset Detail

Domain

Services

- Search Datasets
- Get Dataset Detail

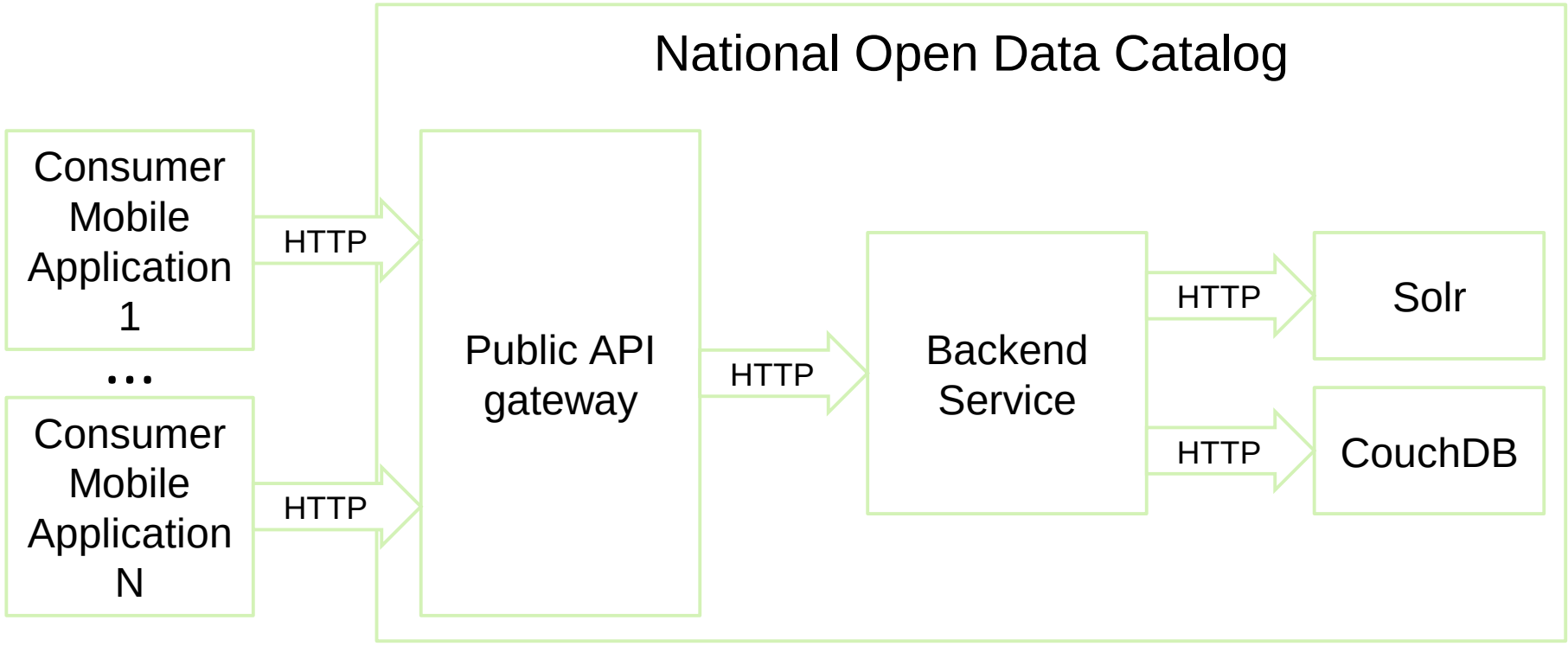
Model

- Dataset
- Distribution

Data Sources

Dataset Source

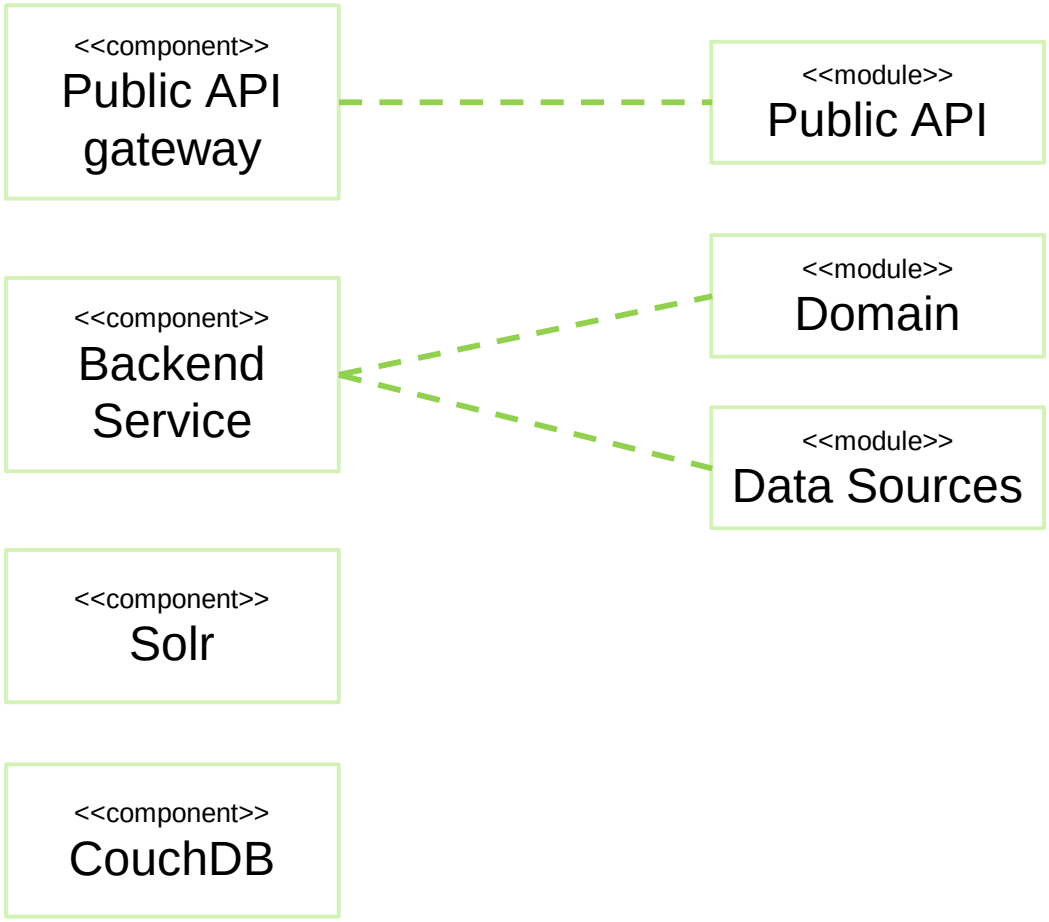
- Dataset Index
- Dataset Gateway


National Open Data Catalog
Consumer Mobile Application 1
...
Consumer Mobile Application N
HTTP
HTTP
Public API gateway
HTTP
Backend Service
HTTP
Solr
HTTP
CouchDB

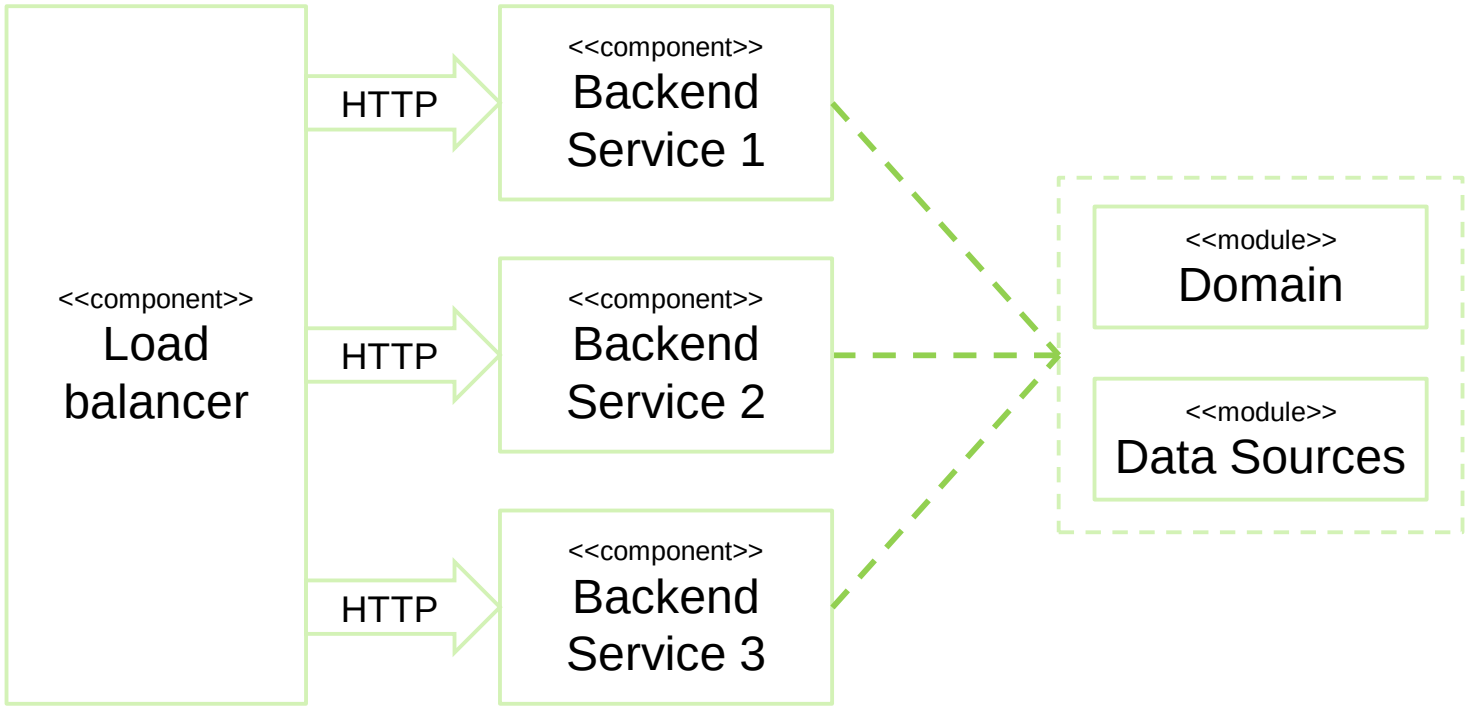
Roles

- connectors have roles for attached components
- a component in a role must fulfil some conditions

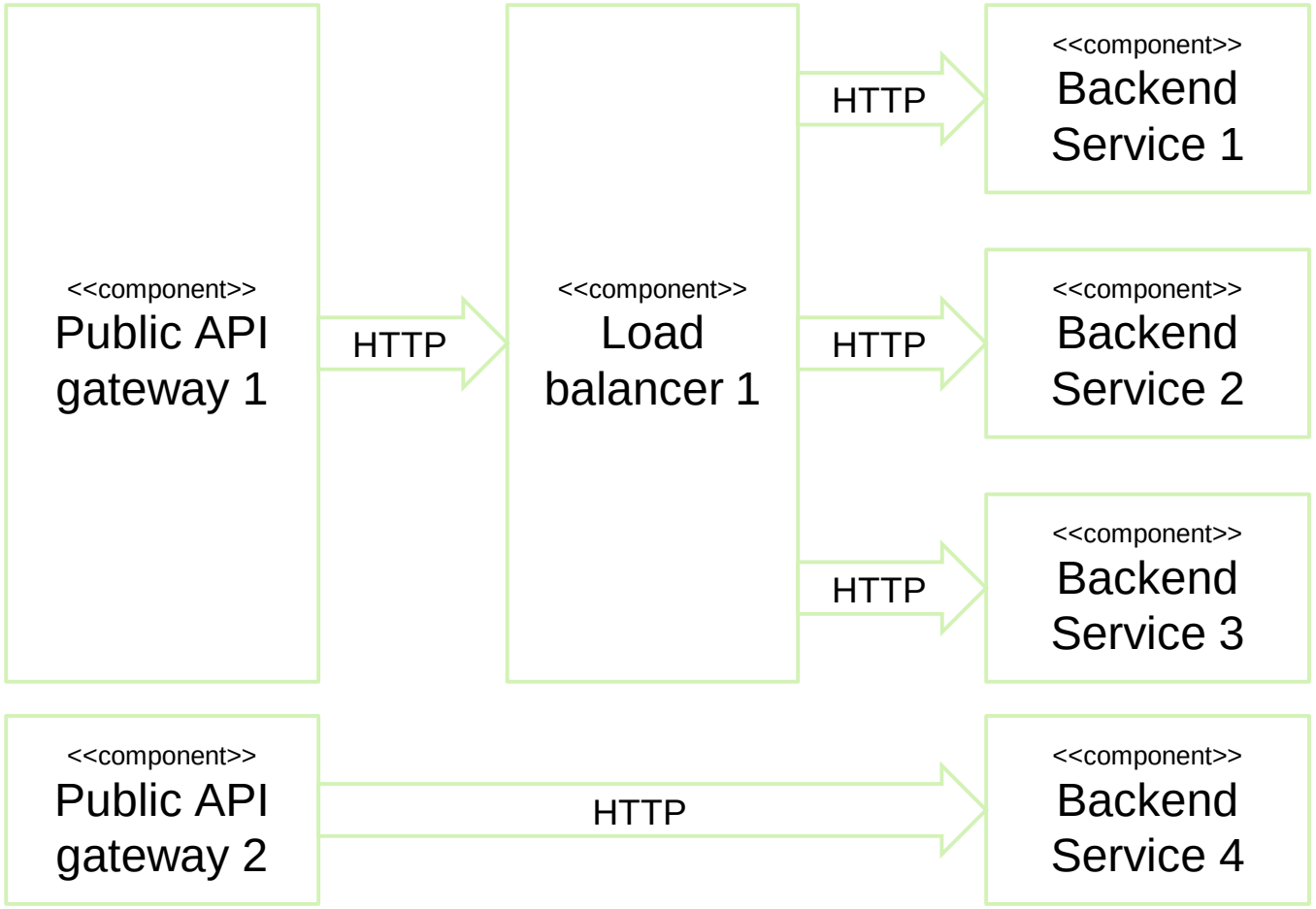
Modules and C&C relationship

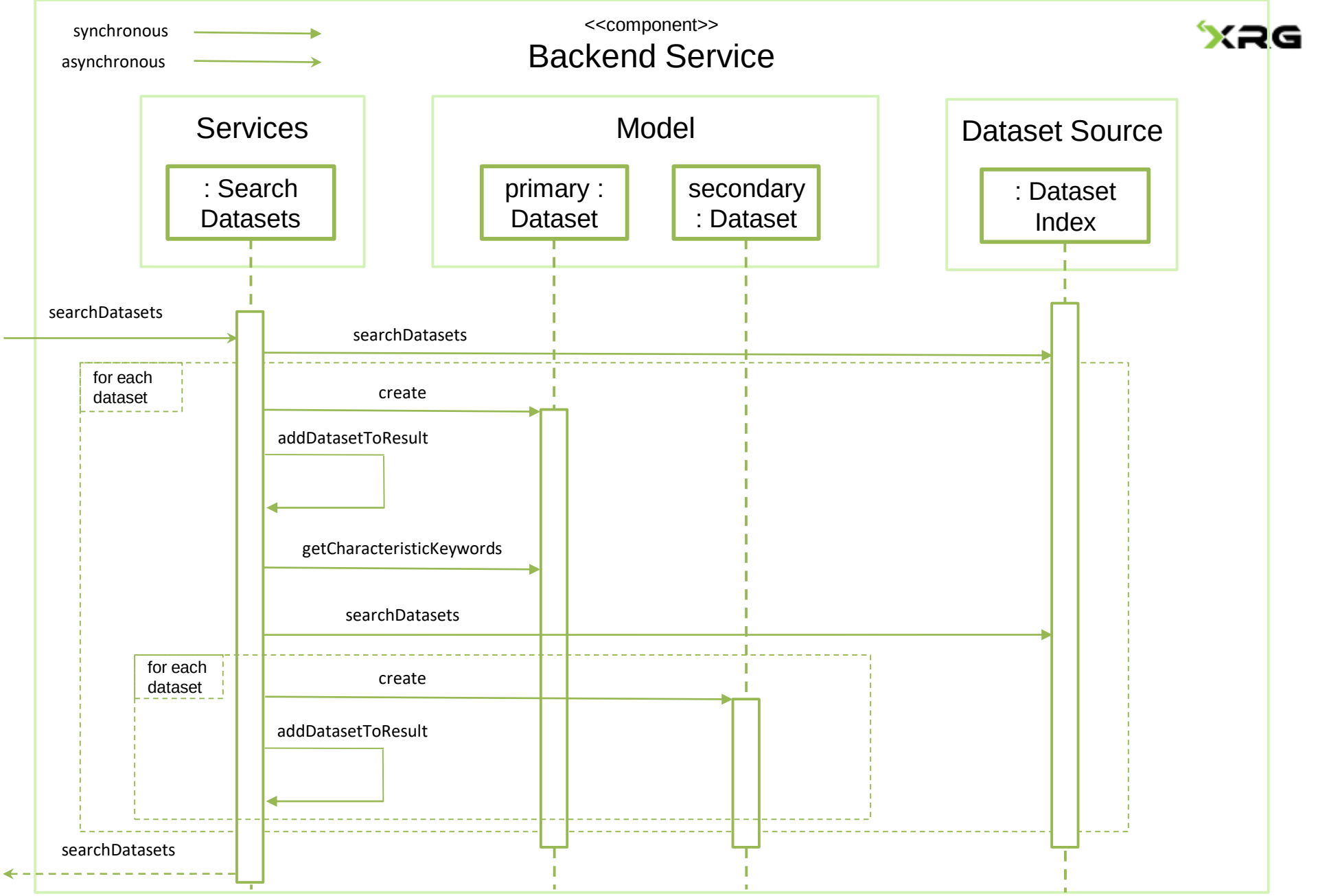


Modules and C&C relationship



Modules and C&C relationship




synchronous
asynchronous
<<component>>
Backend Service
Services
: Search Datasets
Model
primary : Dataset
secondary : Dataset
Dataset Source
: Dataset Index
searchDatasets
searchDatasets
for each dataset
create
addDatasetToResult
getCharacteristicKeywords
searchDatasets
for each dataset
create
addDatasetToResult
searchDatasets

The End