

### Resource

Name	Card.
Resource	
id	0..1
meta	0..1
implicitRules	0..1
language	0..1

### Domain Resource

Name	Card.
DomainResource	
text	0..1
contained	0..*
extension	0..*
modifierExtension	0..*

### Meta

Name	Card.
Meta	
versionId	0..1
lastUpdated	0..1
source	0..1
profile	0..*
security	0..*
tag	0..*

### Terminology Systems

**SNOMED CT**  
<http://snomed.info/sct>

**LOINC**  
<http://loinc.org>

**UCUM**  
<http://unitsofmeasure.org>

**Version 2 table code**  
[http://terminology.hl7.org/CodeSystem/v2-\[X\]](http://terminology.hl7.org/CodeSystem/v2-[X])

**Version 3 code system**  
[http://terminology.hl7.org/CodeSystem/v3-\[X\]](http://terminology.hl7.org/CodeSystem/v3-[X])

### MIME Types

**JSON**  
 application/fhir+json

**XML**  
 application/fhir+xml

**RDF**  
 application/fhir+turtle

### Search

**Parameter Types**

**Base search URL** `base-url / resource ? parameter & parameter & ..`  
<https://vonk.fire.ly/Patient?name=John>

**number** `field (:modifier)=(comparator)number`  
 length=27

**date** `field (:modifier) = comparator yyyy-mm-ddThh:mm:ss[Z](+|-)hh:mm`  
 birthdate=1964-12-10

**string** `field (:modifier) = text`  
 name=John  
 name:exact=John-William

**token** `field = system | code`  
 gender=female  
 gender=http://hl7.org/fhir/v3/AdministrativeGender|female  
 gender=|female

**Reference** `field (:modifier) = id`  
 subject:Patient=23

**Quantity** `field = (comparator) number | system | code`  
 value=5.4|http://unitsofmeasure.org|mg  
 value=1t5.4|http://unitsofmeasure.org|mg

**Composite** `field = value , value`  
`field = state$value,state$value`  
 state-on-date=new\$2013-05-04,active\$2013-05-05

**uri** `field (:modifier) = uri`  
 uri:below=http://acme.org/fhir/

### Bundle

Name	Card.
Bundle	
identifier	0..1
type	1..1
timestamp	0..1
total	0..1
link	0..*
relation	1..1
url	1..1
entry	0..*
link	0..*
fullUrl	0..1
resource	0..1
search	0..1
mode	0..1
score	0..1
request	0..1
method	1..1
url	1..1
ifNoneMatch	0..1
ifModifiedSince	0..1
ifMatch	0..1
ifNoneExist	0..1
response	0..1
status	1..1
location	0..1
etag	0..1
lastModified	0..1
outcome	0..1
signature	0..1

### Operations

For more see: <https://hl7.org/fhir/r4/operationslist.html>

**Validate a resource**  
`[base]/[Resource]/$validate`  
`[base]/[Resource]/[id]/$validate`

**Terminology operations**  
`[base]/ValueSet/[id]/$expand`  
`[base]/ValueSet/[id]/$validate-code`  
`[base]/CodeSystem/$lookup`  
`[base]/CodeSystem/[id]/$subsumes`  
`[base]/CodeSystem/[id]/$find-matches`

**Fetch records**  
`[base]/Patient/[id]/$everything`

**Meta Operations**  
`[base]/$meta`  
`[base]/[Resource]/$meta`  
`[base]/[Resource]/[id]/$meta`  
`[base]/[Resource]/[id]/$meta-add`  
`[base]/[Resource]/[id]/$meta-delete`

**Generate a Document**  
`[base]/Composition/[id]/$document`

**Process Message**  
`[base]/$process-message`

**Find a functional List**  
`[base]/List/$find`

**ConceptMap operations**  
`[base]/ConceptMap/$translate`  
`[base]/ConceptMap/[id]/$translate`

**Closure Table Maintenance**  
`[base]/$closure`

**Questionnaire operations**  
`[base]/StructureDefinition/$questionnaire`  
`[base]/StructureDefinition/[id]/$questionnaire`

### Interactions

Instance		
READ	GET	<code>[base]/[type]/[id]</code>
VREAD	GET	<code>[base]/[type]/[id]/_history/[vid]</code>
UPDATE	PUT	<code>[base]/[type]/[id]</code>
DELETE	DELETE	<code>[base]/[type]/[id]</code>
HISTORY	GET	<code>[base]/[type]/[id]/_history</code>
Type level		
CREATE	POST	<code>[base]/[type]</code>
SEARCH	GET	<code>[base]/[type]?[parameters]</code>
HISTORY	GET	<code>[base]/[type]/_history</code>
Whole System		
CAPABILITY	GET	<code>[base]/metadata</code>
BATCH TRANSACTION	POST	<code>[base]/</code>
HISTORY	GET	<code>[base]/_history</code>
SEARCH	GET	<code>[base]?[parameters]</code>
Conditional Interactions		
CREATE	POST	If-None-Exist: [search parameters] No matches: Create 1 match: 200 OK Multi matches: 412 Precondition Failed
UPDATE	PUT	<code>[base-url] / [type] / ? [search parameters]</code> No matches: Create 1 match: Update Multi matches: 412 Precondition Failed
DELETE	DELETE	<code>[base-url] / [type] / ? [search parameters]</code> No matched: Delete 1 match: Delete Multi matches: 412 Precondition Failed

### Comparators for Search

<code>[parameter]=100</code>	equal 100 in range [99.5..100.5]
<code>[parameter]=100.00</code>	equal 100 in range [99.995..100.005]
<code>[parameter]=lt100</code>	less than 100
<code>[parameter]=le100</code>	less or equal to 100
<code>[parameter]=gt100</code>	greater than 100
<code>[parameter]=ge100</code>	greater or equal to 100
<code>[parameter]=ne100</code>	not equal to 100

### Parameters for all resources

<code>_id</code>	<code>_id=23</code>
<code>_lastUpdated</code>	<code>_lastUpdated=gt2010-10-01</code>
<code>_tag</code>	<code>_tag=http://acme.org/codes needs-review</code>
<code>_profile</code>	<code>_profile=http://hl7.org/fhir/StructureDefinition/lipid</code>
<code>_security</code>	<code>_security = http://hl7.org/fhir/v3/ActCode CEL</code>
<code>_text</code>	<code>_text=(bone OR liver) and metastases</code>
<code>_content</code>	<code>_content=(bone OR liver) and metastases</code>
<code>_list</code>	<code>_list=42</code>
<code>_has</code>	<code>_has=Observation:patient:code=1234-5</code>
<code>_type</code>	<code>_type=Observation,Condition</code>
<code>_query</code>	<code>_query=name&amp;parameters</code>
Search result parameters	
<code>_include</code>	<code>_include=MedicationPrescription:patient</code>
<code>_revinclude</code>	<code>_revinclude=Provenance:target</code>
<code>_count</code>	<code>_count=50</code>
<code>_sort</code>	<code>_sort=status,-date,category</code>
<code>_summary</code>	<code>_summary=true   text   data   count   false</code>
<code>_elements</code>	<code>_elements=identifier,active,link</code>
<code>_contained</code>	<code>_contained = true   false   both</code>
<code>_containedType</code>	<code>_containedType = container   contained</code>
Chained parameters	
GET <code>[base-url]/DiagnosticReport?subject.name=peter</code>	