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# FHIR DevDays Virtual

November 17-20, 2020

**Register now!**



WHO SHOULD ATTEND? Developers | Software Architects | Data Modelers and Data Scientists | Integration Specialists | Product Managers | CTOs and IT Managers

## FACTS & FIGURES JUNE 2020, VIRTUAL EDITION



**680**

PARTICIPANTS



**32**

COUNTRIES



**100+**

TALKS

### 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: <http://hl7.org/fhir/2020Feb/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	[base]/[type]/[id]	
VREAD	GET	[base]/[type]/[id]/_history/[vid]	
UPDATE	PUT	[base]/[type]/[id]	
DELETE	DELETE	[base]/[type]/[id]	
HISTORY	GET	[base]/[type]/[id]/_history	
Type level			
CREATE	POST	[base]/[type]	
SEARCH	GET	[base]/[type]?[parameters]	
HISTORY	GET	[base]/[type]/_history	
Whole System			
CAPABILITY	GET	[base]/metadata	
BATCH TRANSACTION	POST	[base]/	
HISTORY	GET	[base]/_history	
SEARCH	GET	[base]?[parameters]	
Conditional Interactions			
CREATE	POST	If-None-Exist: [search parameters] No matches: Create 1 match: 200 OK Multi matches: 412 Precondition Failed	
UPDATE	PUT	[base-url] /[type]?[search parameters] No matches: Create 1 match: Update Multi matches: 412 Precondition Failed	
DELETE	DELETE	[base-url] /[type]?[search parameters] No matched: Delete 1 match: Delete Multi matches: Depends on server	

### Comparators for Search

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

**Parameters for all resources**

_id	_id=23
_lastUpdated	_lastUpdated=gt2010-10-01
_tag	_tag=http://acme.org/codes needs-review
_profile	_profile=http://hl7.org/fhir/StructureDefinition/lipid
_security	_security = http://hl7.org/fhir/v3/ActCode CEL
_text	_text=(bone OR liver) and metastases
_content	_content=(bone OR liver) and metastases
_list	_list=42
_has	_has=Observation:patient:code=1234-5
_type	_type=Observation,Condition

**Search result parameters**

_include	_include=MedicationPrescription:patient
_revinclude	_revinclude=Provenance:target
_count	_count=50
_sort	_sort=status,-date,category
_total	_total=estimate
_summary	_summary=true   text   data   count   false
_elements	_elements=identifier,active,link
_contained	_contained = true   false   both
_containedType	_containedType = container   contained

**Chained parameters**

GET [base-url]/DiagnosticReport?subject.name=peter