



xShare Yellow Button





Christiaan Knaap
christiaan@fire.ly

xShare Yellow Button



Agenda



1. Firely
2. Setup
3. Demo
4. Considerations
5. Questions



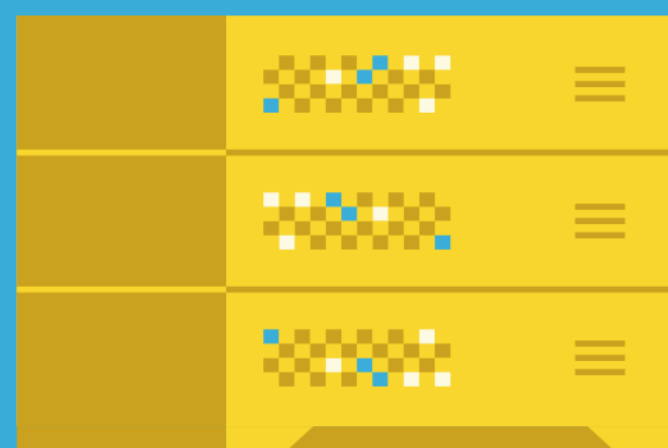
FHIR out of the box

By the people who co-created FHIR

Our FHIR toolkit

Firely Server

FHIR-native data platform



Simplifier.net

Web-based platform for FHIR data modeling



Firely dQM

Real-time digital quality measurement solution



Consulting Services



FHIR Training

Firely Server –Certified Solution

21st Century Cures Act

Giving patients and their care givers secure access to electronic health information (EHI)

CMS Interoperability Rule

Improving health information exchange for patients, health care providers, and payers)



EHDS

Giving patients and their care givers secure access to electronic health information (EHI)



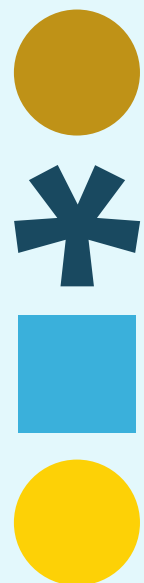
ISiK

Improving exchange between hospital information systems



Mij and VIPP

exchange between care providers and patients, and between healthcare providers



FHIR RESTful API & search

More than 85% of FHIR Rest API implemented

- (v)read, search, patch, history, etc.
- (conditional) create, update & delete
- batch, transaction
- _include, _revinclude, (reverse) chaining, etc.
- Custom search parameters

<https://server.fire.ly/>

Capability statement

```
{
  "resourceType": "CapabilityStatement",
  "id": "430fc89d-a11f-4ebf-8f68-5a4af8f96e9a",
  "meta": {
    "versionId": "271585bd-b95b-4729-8b75-d2fd5942e904",
    "lastUpdated": "2022-04-12T21:02:20.7665596+00:00"
  },
  "language": "en-US",
  "url": "http://server.fire.ly/fhir/CapabilityStatement/FirelyServer",
  "version": "1.0",
  "name": "Firely Server 4.8.1 CapabilityStatement",
  "status": "active",
  "experimental": true,
  "date": "2022-04-12T21:02:20.7665725+00:00",
  "publisher": "Firely",
  "contact": [
    {
      "name": "Firely",
      "telecom": [
        {
          "system": "email",
          "value": "server@fire.ly",
          "use": "work"
        }
      ]
    }
  ],
  {
    "name": "Licensed to",
    "telecom": [
      {

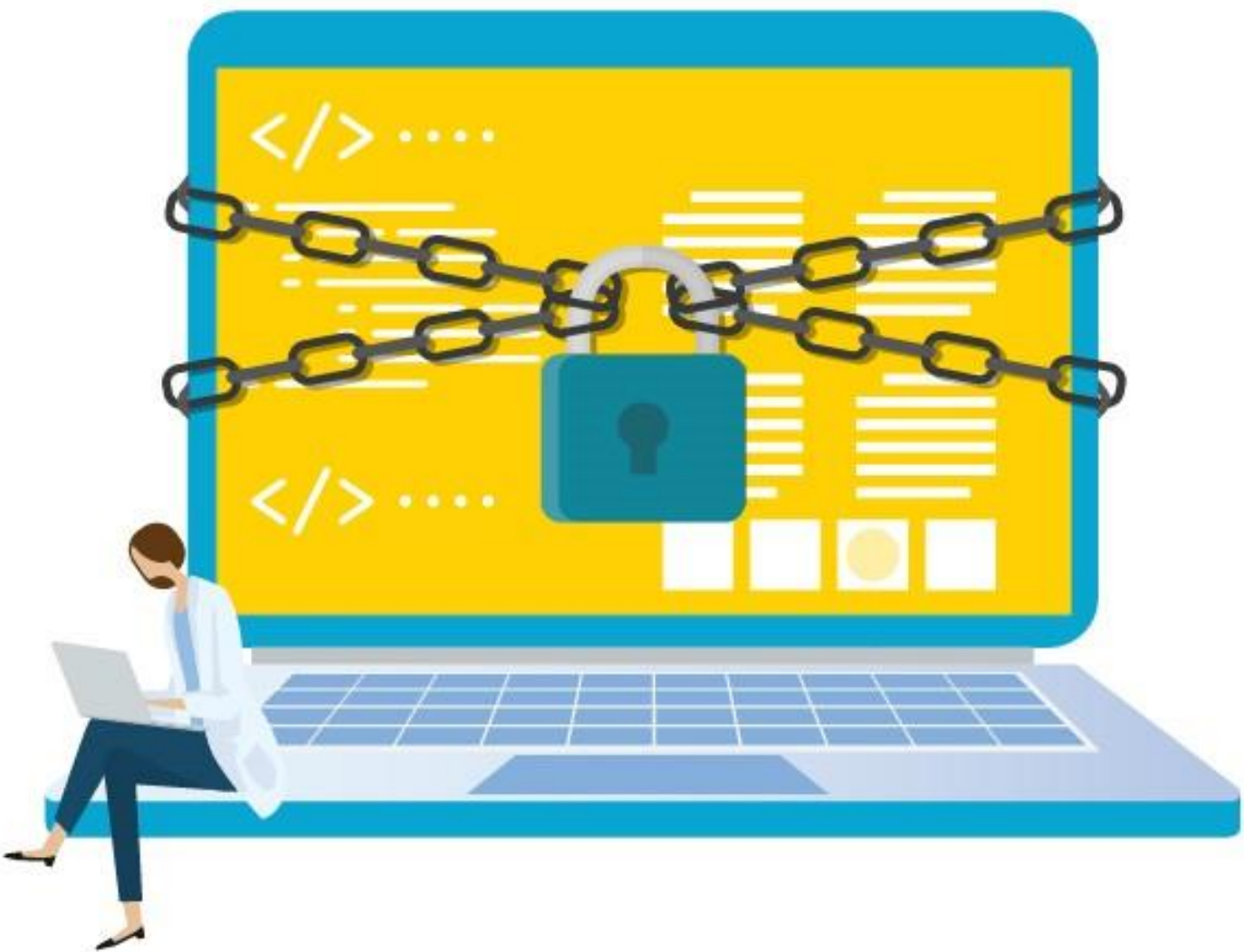
```



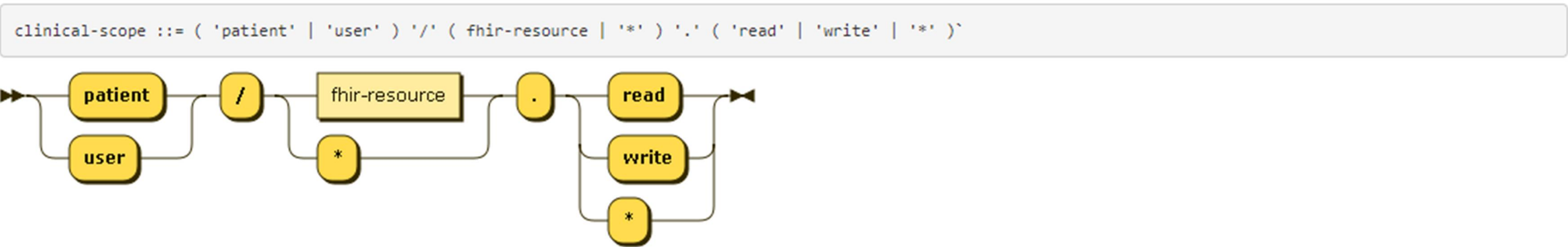
Security/SMART on FHIR

Support for SMART on FHIR v1 and v2

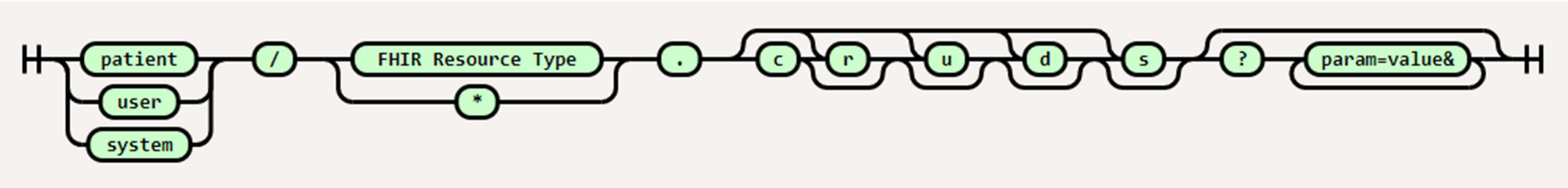
Works with any SMART on FHIR (OAuth 2.0) compatible auth server
Including Firely Auth



SoF v1



SoF v2



Features: Auditing

Registration of audit events:

- Log entries
- AuditEvent resources

Contents of audit event highly configurable

AuditEvent resources cannot be tampered with

HIPAA compliant

ATNA compliant

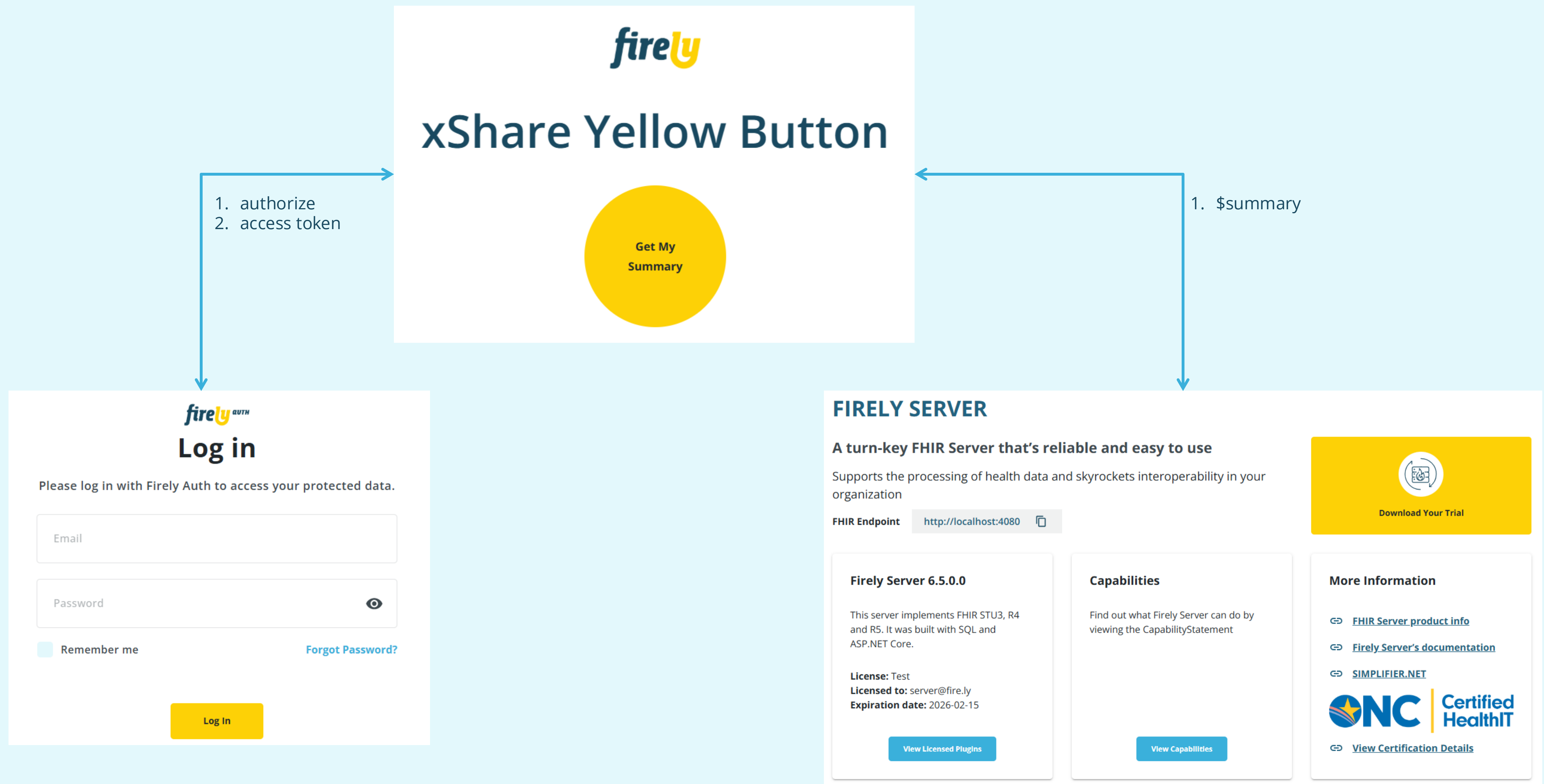




Setup

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Demo setup

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firely

Request Summary

Yellow Button app

- Start the app
- Click the button



Patient log in

Firely Auth

Log in as patient

firely

auth

Log in

Please log in with Firely Auth to access your protected data.

I.koster@fire.ly

.....

👁

☐

Remember me

[Forgot Password?](#)

Log In

Users 3

Full Name ↑	Email	User Type	Type	
Christiaan Knaap	christiaan@fire.ly	Practitioner	Local	>
Gastone Farnese	g.farnese@fire.ly	Patient	Local	>
Louise Köster	l.koster@fire.ly	Patient	Local	>

10 ▾

< 1 >

Clients 1

Client Id ↑	Description	Enabled	Client Type	Tags #	
yellow-button	xShare Yellow Button	Enabled	Standalone App / EHR Launch App		>

10 ▾

< 1 >

Grant permission

Firely Auth

- as a Patient, read and search every resource within my record
- as a User, read and search Medication resources
- SMART on FHIR v2 syntax

xShare Yellow Button App is requesting your permissions

Uncheck the permission you do not want to grant.

Personal information

- ☒ Your user identifier
- ☒ User profile ⓘ

Application Access to

Grant All Permissions ☒

- ☒ launch/patient ⓘ
- ☒ patient/*.rs
- ☒ user/Medication.rs ⓘ

Remember my decision

- ☐ Remember this decision until I revoke it
- ☒ Prompt me again next time

Decline

Accept

Generate summary

Firely Server

- construct Composition
- fetch related resources
- generate narratives
- bundle it up
- enforce authorization layers

Browse data

Yellow Button app

Köster,

Patient ID: e8c3437b-68ee-4397-a09e-489c548f2f9f
Date of Birth: July 1, 1957
Gender: female

Home Address: Regina-Butte-Ring 737, Saulgau, 88348, Germany
Phone Number: +49(0)2075293938
Email Address: No value

ALLERGY INTOLERANCES CONDITIONS **MEDICATION STATEMENTS** MEDICATION REQUESTS

MedicationStatements

Medication	Status	Intent	ID
Metoprolol tartrate (as metoprolol succinate) 100 mg prolonged-release oral tablet	1 tablet (100 mg) once daily	-	c0532bfc-7265-462b-b7d7-94b9d84b22fa
Nitroglycerin 400 microgram/actuation sublingual spray	400 micrograms per spray, use one spray under the tongue as needed for chest pain, repeat every 5 minutes if needed, up to 3 sprays in 15 minutes	-	17f7d176-37c2-42d9-8d1a-f05a5aee2063
Simvastatin 20 mg oral tablet	1 tablet (20 mg) by mouth once daily	-	6b448aba-e32b-460f-8490-7967cfe8c26
Clopidogrel (as clopidogrel bisulfate) 75 mg oral tablet	1 tablet (75 mg) once daily	-	f14f0481-b214-4d51-b2b2-eaa9003cfccb
Lisinopril 10 mg oral tablet	1 tablet (10 mg) by mouth once daily	-	11a49f6e-6347-4498-adea-8cf995d158d
Hydrochlorothiazide 25 mg oral tablet	1 tablet (25 mg) by mouth once daily	-	edb2d11b-f931-46fe-ad9e-5742843db96e
Amlodipine (as amlodipine besylate) 2.5 mg oral tablet	1 tablet (2.5 mg) by mouth once daily	-	e555856f-ba68-4f4f-b429-836741228c72

Check Audit

```
{
  "resourceType": "AuditEvent",
  "id": "43fcb63e-dfbc-4223-a551-ff01d415abc6",
  "meta": {
    "versionId": "a9104d58-13e4-460e-a6da-5cb09fbc1ba5",
    "lastUpdated": "2025-11-30T11:24:23.579+00:00",
    "profile": [
      "http://hl7.org/fhir/StructureDefinition/AuditEvent",
      "https://profiles.ihe.net/ITI/BALP/StructureDefinition/IHE.BasicAudit.PatientQuery"
    ]
  },
  "extension": [
    {
      "url": "http://hl7.org/fhir/5.0/StructureDefinition/extension-AuditEvent.category",
      "valueCodeableConcept": {
        "text": "Executed custom operation $summary"
      }
    }
  ],
  "type": {
    "system": "http://terminology.hl7.org/CodeSystem/audit-event-type",
    "code": "rest",
    "display": "RESTful Operation"
  },
  "subtype": [
    {
      "system": "http://hl7.org/fhir/http-verb",
      "code": "GET",
      "display": "GET"
    },
    {
      "system": "http://hl7.org/fhir/restful-interaction",
      "code": "operation",
      "display": "operation"
    }
  ],
  "action": "E",
  "recorded": "2025-11-30T11:24:23.579+00:00",
  "outcome": "0",
  "outcomeDesc": "200",
  "agent": [
    {
      "type": {
        "coding": [
          {
            "system": "https://profiles.ihe.net/ITI/BALP/CodeSystem/UserAgentTypes",
            "code": "UserOAuthAgent",
            "display": "User OAuth Agent participant"
          }
        ]
      },
      "who": {
        "reference": "http://localhost:4080/R4/Patient/e8c3437b-68ee-4397-a09e-489c548f2f9f",
        "display": "l.koster@fire.ly"
      },
      "requestor": true
    },
    {
      "type": {
        "coding": [
          {
            "system": "http://dicom.nema.org/resources/ontology/DCM",
            "code": "110150"
          }
        ]
      },
      "who": {
        "identifier": {
          "value": "yellow-button"
        }
      },
      "requestor": false
    }
  ]
}
```

Firely Server / Postman





Considerations

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The Format

Will it be FHIR?



Controlling the contents

Who and how?

IPS, with \$summary, lets the server create the composition

\$document lets the user supply a composition

\$everything includes everything within the users' authorization



Authorization

SMART on FHIR

- Client authorization:
 - Well-established standard with SMART on FHIR v2
 - Very detailed attribute-based access control
 - Launch context
- Firely Server adds:
 - AccessPolicy (user authorization)
 - Tenant
 - Operation access



*xShare Yellow Button seems easy on a FHIR
Server, but it needs many components
working together*

Want to see the European Patient Summary brought to life?

Join tomorrow's webinar — From FHIR Data to Insight: Dashboards in Minutes

See how the European Patient Summary can be visualized and used directly inside existing EHR workflows *in minutes*.

Tuesday, 2 December at 12PM

firely +  Open Health Hub



Martijn Verhoeven



Gasper Andrejc



Martine Berden



Questions

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