

Servicios bajo demanda en la nube

Soluciones actuales y visión de futuro

InterSystems Iberia Summit 2022

Ponentes



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Agenda



Contenido

- Servicios en la nube
- Ejemplos
- Arquitectura en la nube de InterSystems



¿Qué aprenderás?

- Visión de los servicios en la nube de InterSystems
- Ventajas de utilizar servicios en la nube combinables
- Vistazo a la arquitectura básica que utiliza InterSystems para las soluciones en la nube

La nube en todas partes



IaaS

PaaS

SaaS

Modelos de despliegue

On-site	IaaS	PaaS	SaaS
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

 You manage

 Service provider manages

Fuente: <https://www.redhat.com/es/topics/cloud-computing/iaas-vs-paas-vs-saas>

Servicios en la nube (InterSystems)

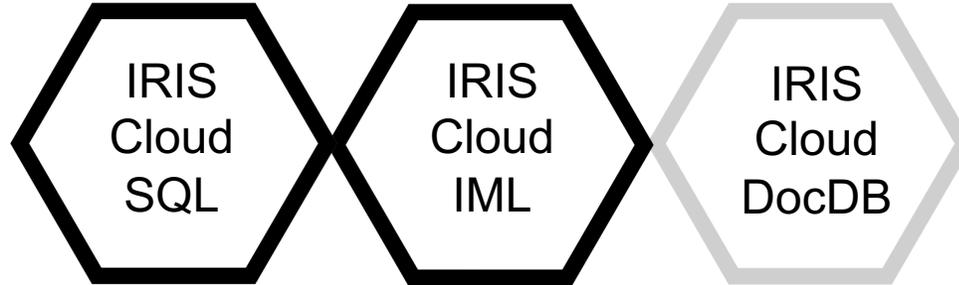
		IRIS Cloud SQL
		IRIS Cloud IntegratedML
		FHIR SQL Builder
	IRIS for Health	FHIR Server
IRIS for Health	IRIS Data Platform	FHIR Transformation Service
IRIS Data Platform	Health Connect Cloud	InterSystems Network Connect

IaaS

PaaS

SaaS

Servicios en la nube



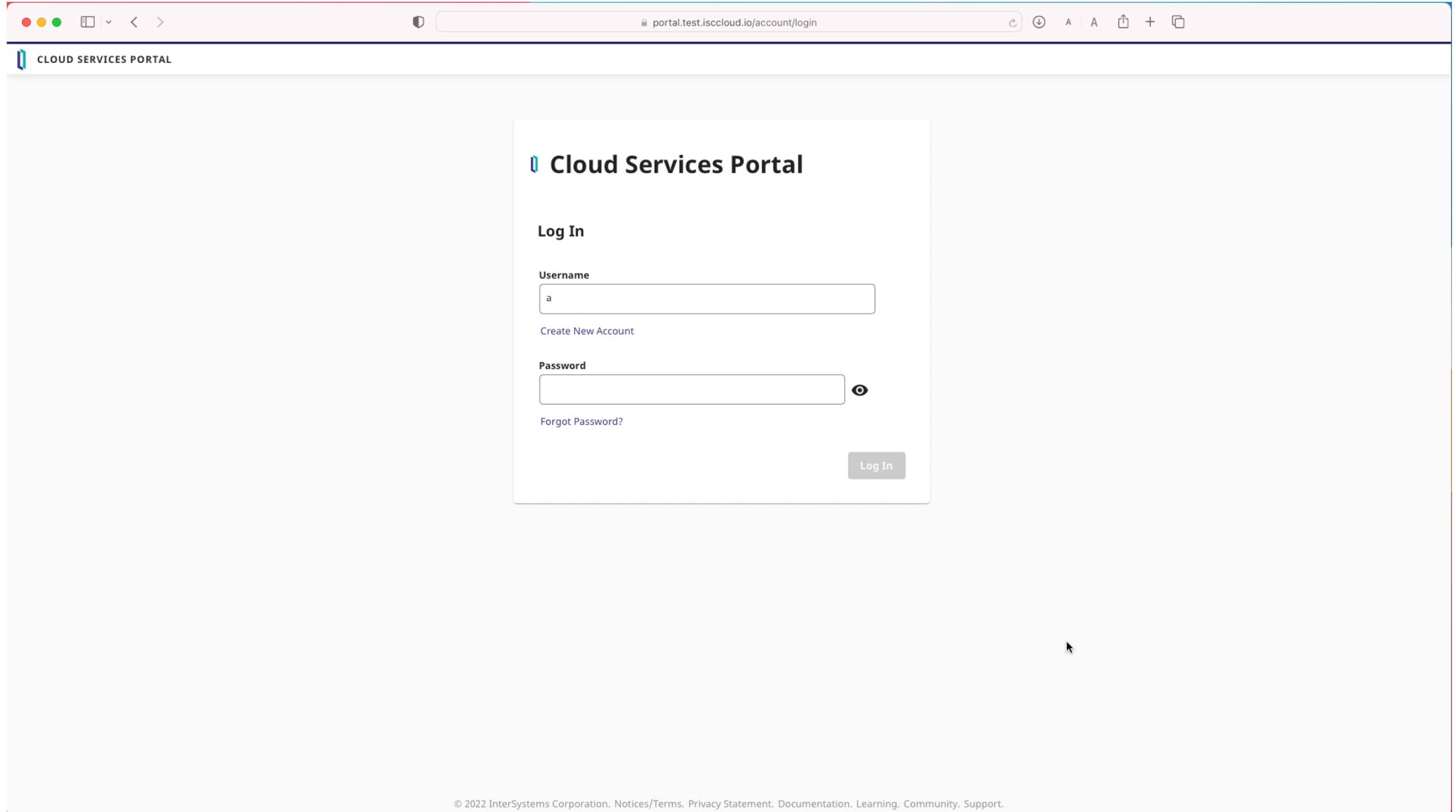
- **Combinables**
- **Desacoplados**
- **Desplegables de forma independiente**
- **Servicios inteligentes**



HL7® FHIR®



FHIR Server. Despliegue



The image shows a web browser window displaying the login page of the Cloud Services Portal. The browser's address bar shows the URL `portal.test.isccloud.io/account/login`. The page header includes the text "CLOUD SERVICES PORTAL" with a logo icon. The main content area features a white login card with the following elements:

- Cloud Services Portal**: The title of the login card.
- Log In**: The section title for the login form.
- Username**: A label above a text input field containing the character "a".
- Create New Account**: A link below the username field.
- Password**: A label above a password input field.
- Forgot Password?**: A link below the password field.
- Log In**: A button at the bottom right of the login card.

At the bottom of the page, there is a footer with the text: © 2022 InterSystems Corporation. Notices/Terms. Privacy Statement. Documentation. Learning. Community. Support.

FHIR Server. API Key

The screenshot shows a web browser window with the URL `portal.test.iscloud.io/deployments`. The page title is "CLOUD SERVICES PORTAL". In the top right corner, the user is identified as "User: Alberto Fuentes". Below the user name is a dropdown menu showing "afuentes Default" and a "Refresh" button.

The main content area is titled "Deployments" and includes a "Create New Deployment" button. A message states: "Your role or account type limits deployment creation." Below this message is a deployment card for "afuentes FHIRServer". The card details include "FHIR Server" and "us-east-1", and its status is "Status: RUNNING".

At the bottom of the page, there is a footer with the text: "© 2022 InterSystems Corporation. Notices/Terms. Privacy Statement. Documentation. Learning. Community. Support."

FHIR Server. Postman

portal.test.isccloud.io/deployments/vm87g4k0ic28/overview

afuentes Default Refresh

Deployment Details

Deployment Size Extra Small	Cores 2	Ram 8GB	Created 31/10/2022, 12:27:57 UTC	Deployment Id vm87g4k0ic28
Cloud Provider AWS	Region us-east-1	Expiration Date Does not Expire	Service Level Default	Service Level Urgency 1
Service Status RUNNING	HA State non-mirrored	InterSystems Platform FHIR Server	InterSystems Product Version 2022.1.0.209.0	

Stop Deployment

FHIR Details

Api Key Endpoint
Use this endpoint when authenticating against the service with an API Key

<https://fhir.vm87g4k0ic28.workload-nonprod-fhiraas.isccloud.io>

Sample requests with API keys

OAuth 2.0 Endpoint
Use this endpoint when authenticating against the service with OAuth 2.0 tokens

<https://fhirauth.vm87g4k0ic28.workload-nonprod-fhiraas.isccloud.io/oauth2>

FHIR Sample requests with OAuth2

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FHIR Server. OAuth2

The screenshot shows a web browser window with the URL `portal.test.isccloud.io/deployments`. The page is titled "CLOUD SERVICES PORTAL" and shows the user "Alberto Fuentes". The main content area is titled "Deployments" and contains a "Create New Deployment" button. A message states: "Your role or account type limits deployment creation." Below this, a deployment card is shown for "afuentes FHIRServer" in the "us-east-1" region, with a status of "RUNNING".

afuentes FHIRServer
FHIR Server
us-east-1
Status: RUNNING

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**INTERSYSTEMS FHIR
TRANSFORMATION SERVICE**

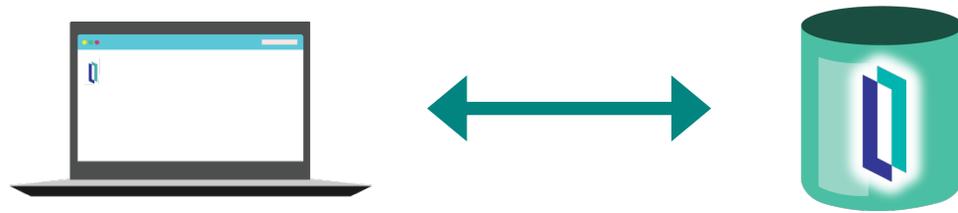
HL7® V2



HL7® FHIR®



**INTERSYSTEMS
IRIS CLOUD SQL**



IRIS Cloud SQL

Características

- Desplegar endpoint bases datos IRIS SQL en el cloud
- Importar DDL / Schemas y datos
- Crear índices
- Encriptación por defecto (At Rest / In transit)
- Backups automáticos (diarios y almacenados en S3)

Import Files ⓘ

- 1 Select type
- 2 Select files
- 3 Complete

Type of file to import:*

- DDL or DML statement(s) ⓘ
- CSV data ⓘ

Next >

Deployments > demo > SQL Query Tools

Refresh

Schema Tree ⓘ

- ▼ Data
 - ▼ Diabetes10K
 - A1Cresult
 - acarbose
 - acetoexamide
 - admission_source_id
 - admission_type_id
 - age
 - change
 - chlorpropamide
 - citoglipton
 - diabetesMed
 - diag_1
 - diag_1_desc
 - diag_2
 - diag_2_desc
 - diag_3
 - diag_3_desc

SQL Editor ⓘ

```
SELECT TOP 100 *  
FROM Data.Diabetes10K  
WHERE readmitted = 1
```

Response timeout (ms) ⓘ

25000

Clear

< Previous

Execute

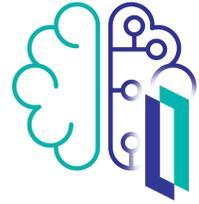
Next >

History

Results

Search ⓘ

race ^	gender ^	age ^	weight ^	admission_type_id ^	readmitted ^
Caucasian	Male	[80-90]	?	Not Available	1
Caucasian	Male	[60-70]	?	Elective	1
Hispanic	Male	[60-70]	?	Emergency	1



INTERSYSTEMS IRIS CLOUD INTEGRATEDML

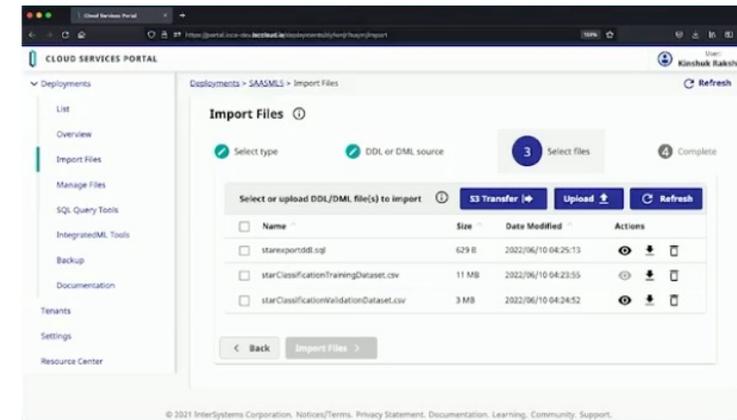


IRIS Cloud IntegratedML

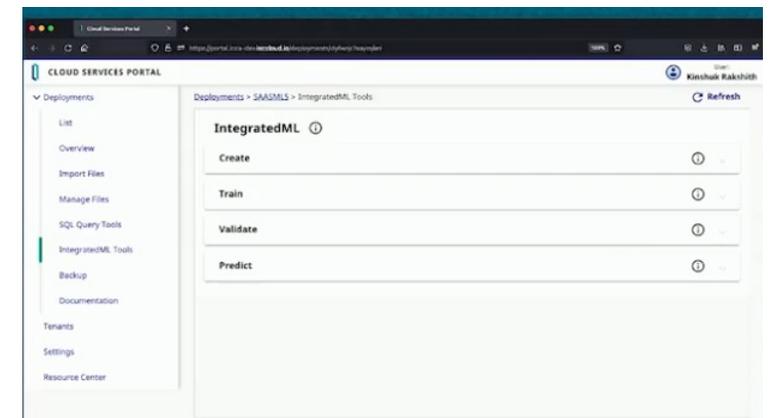
Características

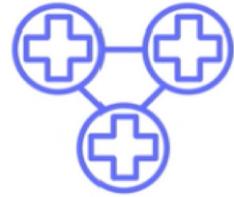
- Construir modelos Machine Learning desde SQL
- Posibilidad de trabajar con varios proveedores: AutoML, H2O, DataRobot

Cargar datos

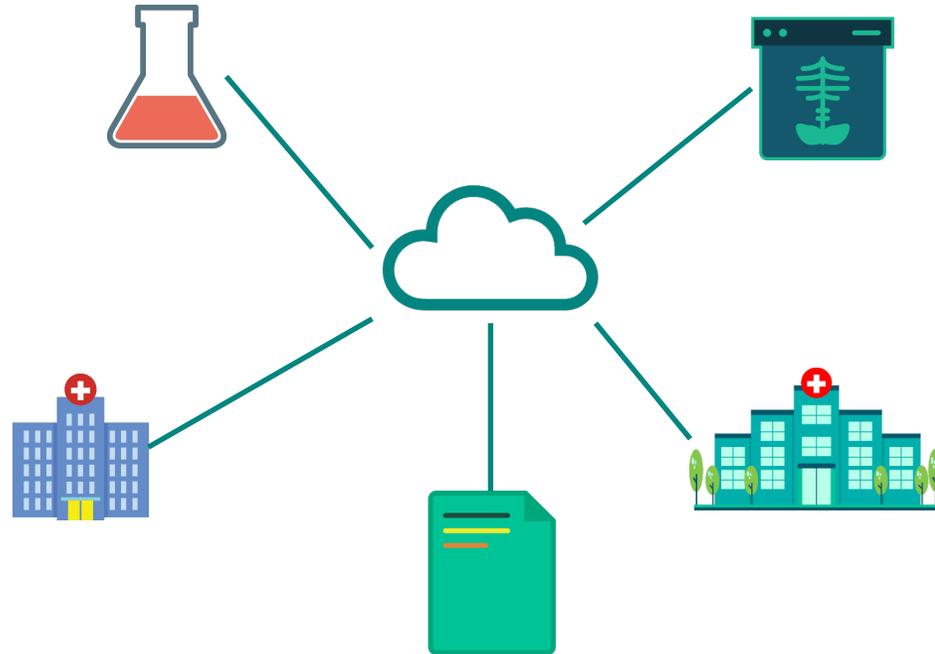


Crear, Entrenar, Validar y Predecir





INTERSYSTEMS HEALTH CONNECT CLOUD



Health Connect Cloud. Despliegue

The screenshot shows a web browser window with the address bar displaying `portal.test.isccloud.io/deployments`. The page title is "CLOUD SERVICES PORTAL". On the left, a navigation menu lists "Cloud Services", "Deployments", "Tenants", "Settings", and "Resource Center". The "Deployments" section is active, showing a sub-header "Deployments" and a large "Deployments" title. A blue button labeled "Create New Deployment" is visible. In the top right corner, there is a user profile for "Alberto Fuentes" and a dropdown menu currently showing "jruij Default" with a "Refresh" button next to it. The footer contains the text: "© 2022 InterSystems Corporation. Notices/Terms. Privacy Statement. Documentation. Learning. Community. Support."

Health Connect Cloud. Usuarios

Browser address bar: portal.test.isccloud.io/deployments

Page Header: CLOUD SERVICES PORTAL

User: Alberto Fuentes

Left Navigation: Cloud Services, Deployments, Tenants, Settings, Resource Center

Deployments

afuentes Default

Refresh

Deployments

Create New Deployment

Your role or account type limits deployment creation.

afuentes HealthConnect Health Connect Cloud us-east-1
COMPLETE

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Health Connect Cloud. Producciones

portal.test.iscccloud.io/deployments/6y6lwrnnvvp/overview

CLOUD SERVICES PORTAL User: Alberto Fuentes

Cloud Services

- Deployments
 - List
 - Overview
 - System Management
 - Connect Users
 - Productions
 - SSL/TLS Configurations
 - SQL Gateways
 - Documentation
- Tenants
- Settings
- Resource Center

Deployments > afuentes HealthConnect > Overview afuentes Default [Refresh](#)

Deployment Details

Deployment Size Extra Small	Cores 2	Ram 8GB	Created 31/10/2022, 14:26:06 UTC	Deployment Id 6y6lwrnnvvp
Cloud Provider AWS	Region us-east-1	Expiration Date Does not Expire	Service Level Default	Service Level Urgency 1
HA State non-mirrored	InterSystems Platform Health Connect Cloud		InterSystems Product Version 2022.1.0.209.0	

Health Connect Cloud Details

Shared Mount for File System Interoperability

/connect

Network Information

CIDR Block: 10.10.1.0/24

Virtual IP: 10.10.1.254

Version

Update Available 	Current Version 2022.1.209.0b524871038193049	Latest Version 2022.1.209.03232823e48ad7f7b
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Health Connect Cloud. Código

The screenshot shows the Visual Studio Code interface for a project named "summit-healthconnect-cloud". The Explorer pane on the left displays the following file structure:

- EXPLORER
 - OPEN EDITORS
 - SUMMIT-HEALTHCONNECT-CLOUD
 - .vscode
 - settings.json
 - src
 - Demo / HL7 / MsgRouter
 - ABCRoutingRule.cls
 - ADTLastNameTransform.cls
 - AlertRule.cls
 - EmailAlertTransform.cls
 - Functions.cls
 - ORMLastNameTransform.cls
 - SearchTable.cls
 - XYZRoutingRule.cls
 - HCC / Connect
 - Production.cls

The Output pane at the bottom right is active, showing "ObjectScript" with a cursor at the start of a new line. The status bar at the bottom indicates the connection: "Connect healthconnectcloud.6y6lwrnnvvp.workload-nonprod-hcc.isccloud.io:443[MYPRODUCTION]".

Health Connect Cloud. Conexiones

portal.test.iscccloud.io/deployments

Cloud Services Portal

Production Configuration

User: **Alberto Fuentes**

Cloud Services Portal

- Cloud Services
- Deployments**
- Tenants
- Settings
- Resource Center

Deployments

Deployments

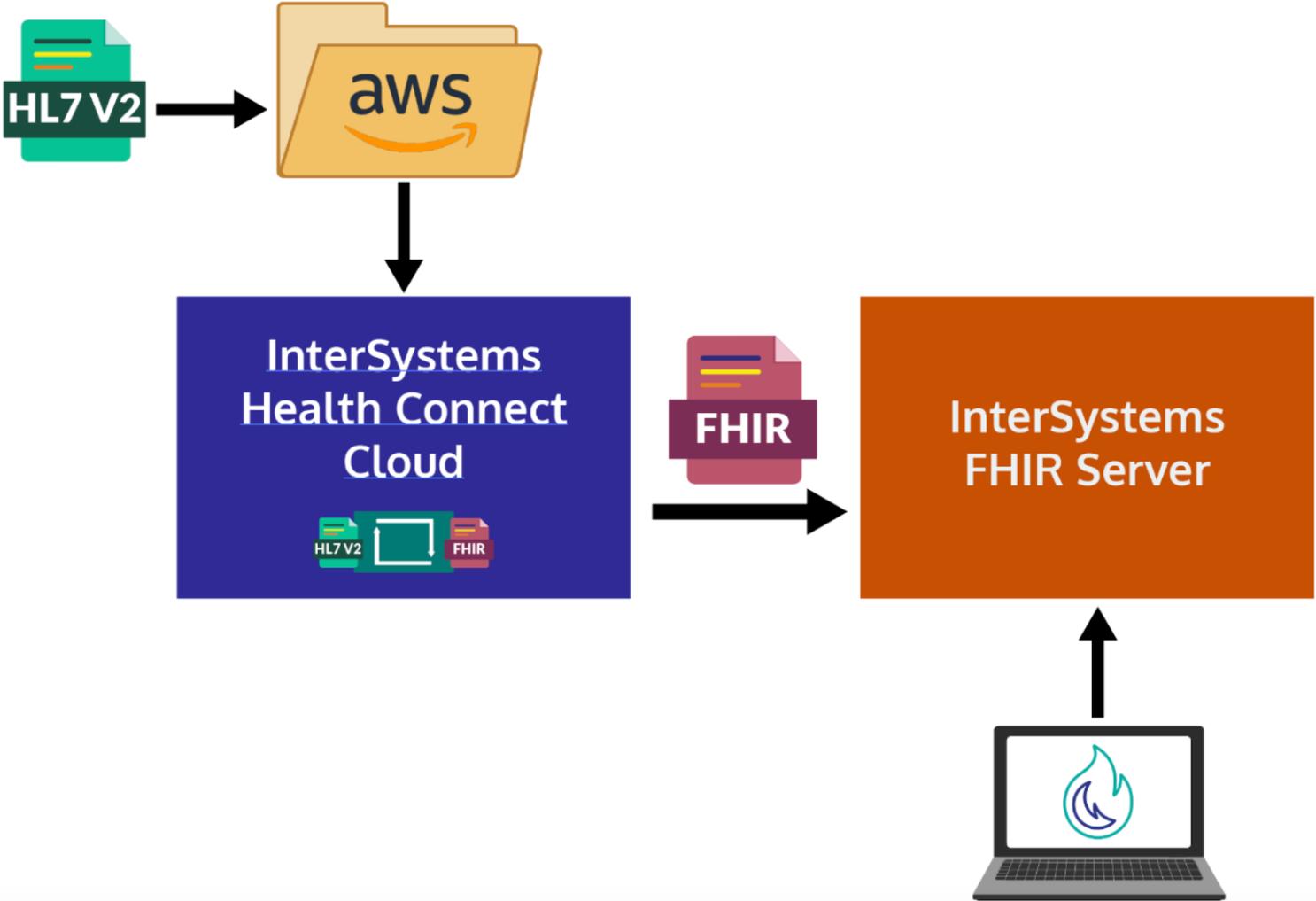
Create New Deployment

jrui Default

Refresh

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Servicios combinables



Casos de uso

NorthWest London Integrated Care System

- Servicio interoperabilidad en la nube con HealthShare Health Connect Cloud
- NHS Long Term Plan (UK)
- 2.1M ciudadanos



My Personal LifeScope

- Compañía francesa de tecnología e-health para mejorar datos de paciente para profesionales
- Utilizan servicio InterSystems FHIR Server como su repositorio FHIR en la nube para interoperabilidad, seguridad, trazas y desarrollo rápido

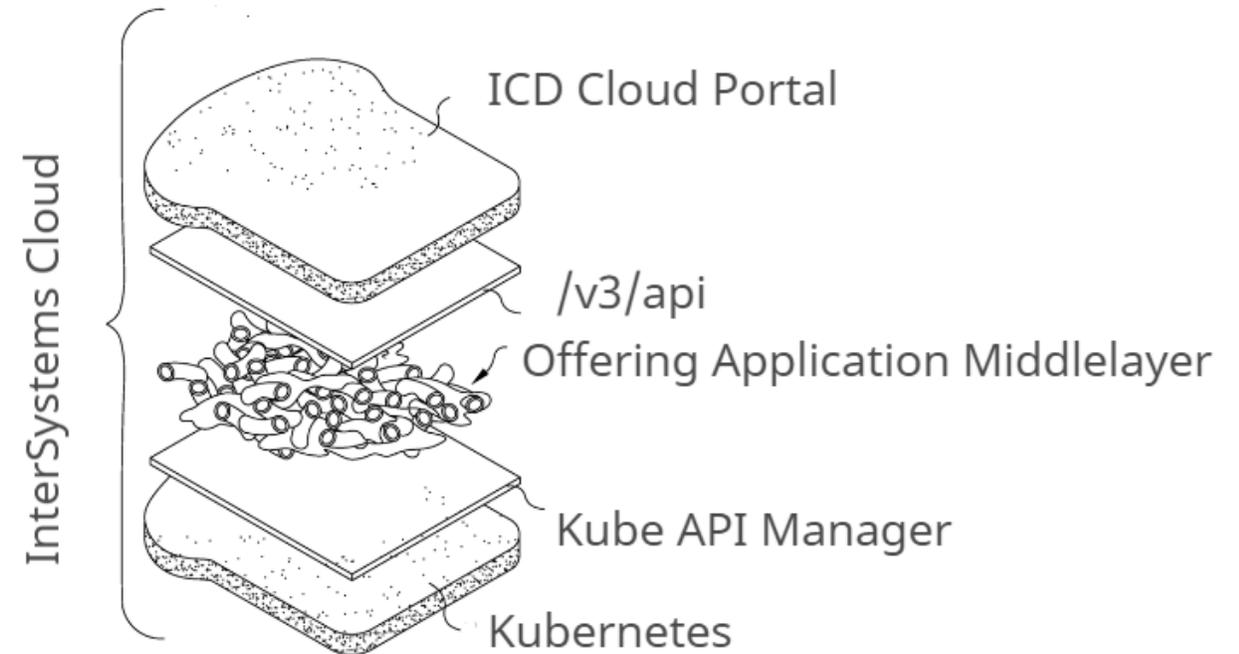


*My Personal
Lifescop*

Arquitectura servicios en la nube

Retos del diseño de la arquitectura

- ¿Cómo construir ofertas servicios en la nube?
- ¿Qué tecnologías utilizar?



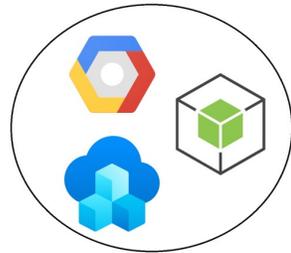
Arquitectura servicios en la nube

Kubernetes

- APIs coherentes en la nube
- Cloud SDKs

APIS coherentes (nube)

- Cloud SDKs
- InterSystems Portal API
- Kubernetes API Server



Librerías combinables

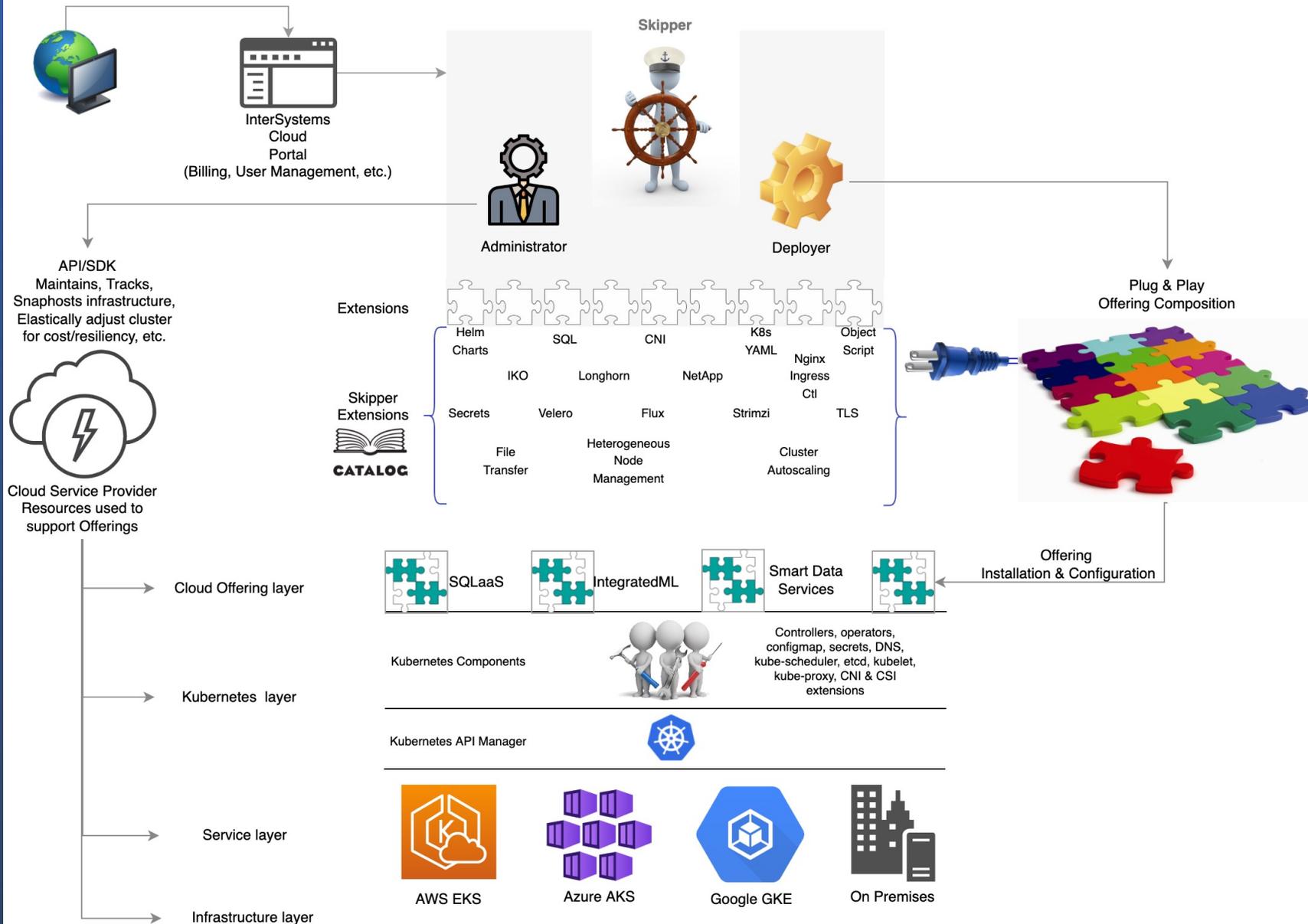
- Serverless functions
- Kubernetes Operators/Controllers

Servicios bajo demanda y administración

- Plantillas para servicios
- Auto-escalado elástico
- Monitorización



InterSystems Cloud Core Architecture



Gracias.