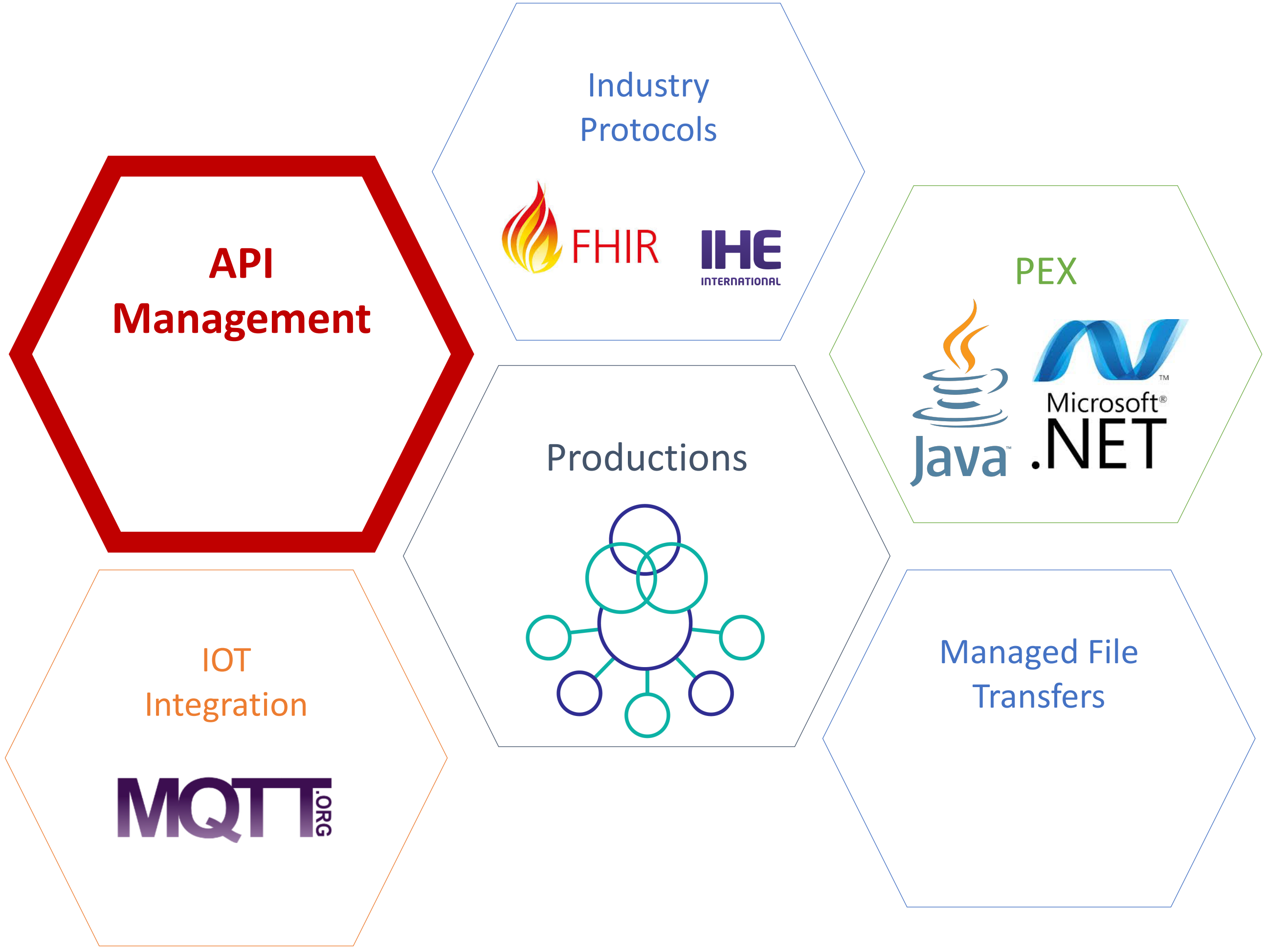
REST & API Management

Workshop



API Management

Industry Protocols

PEX

Productions

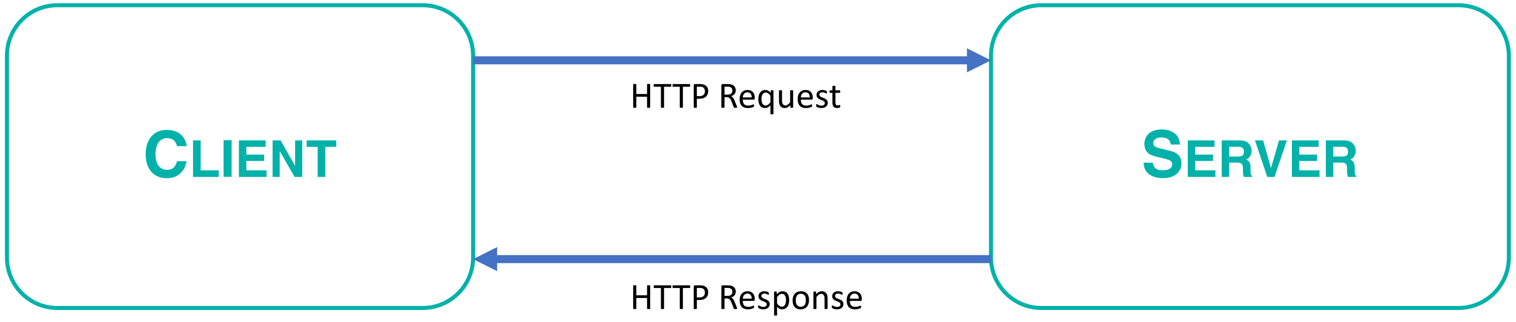
IOT Integration

Managed File Transfers

Alberto Fuentes
Sales Engineer

REST

```
GET /player/3
```



Client

HTTP Request

Server

HTTP Response

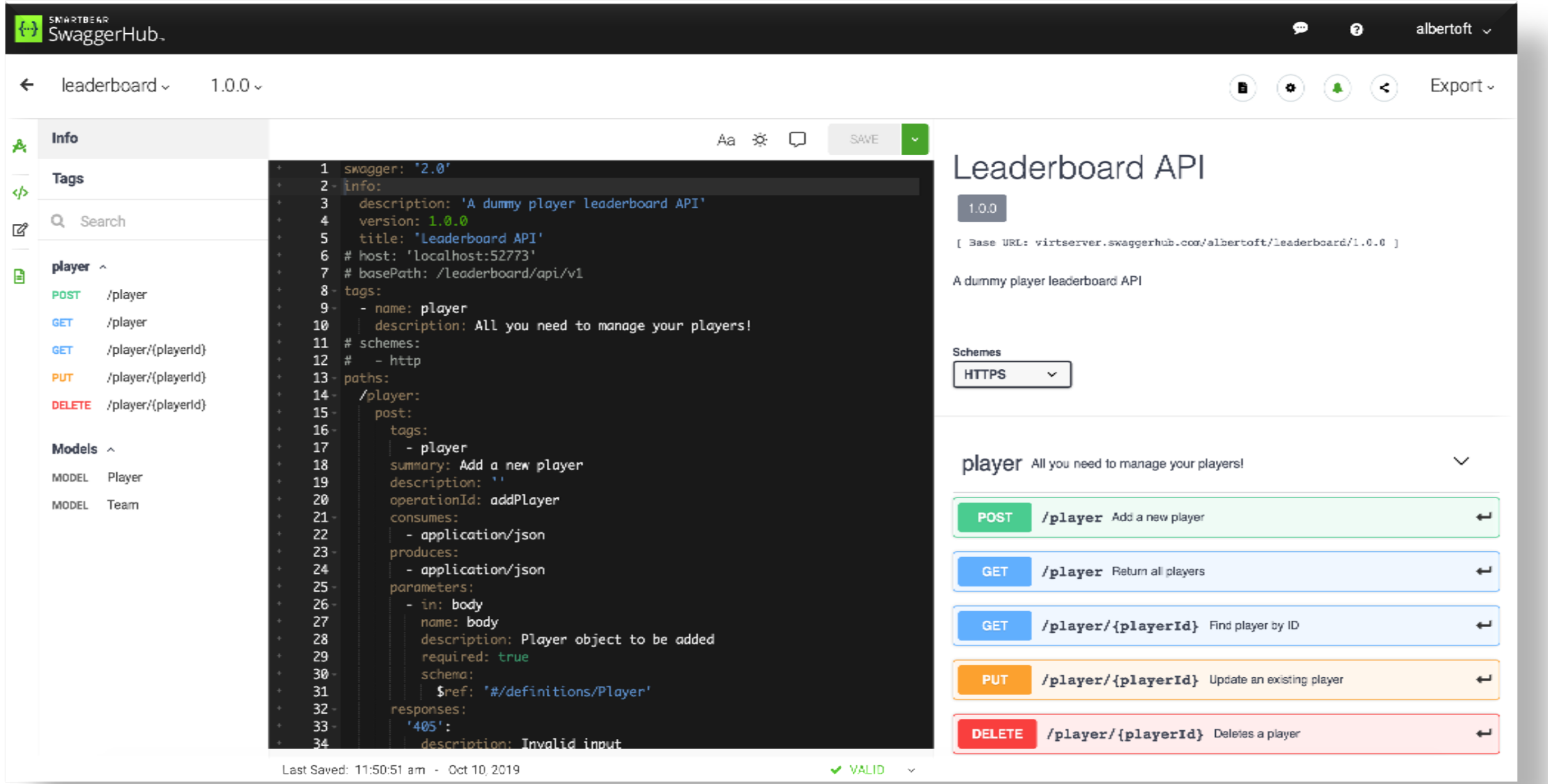
```
200 OK
Content-Type: application/json
{"id":"3","name":"John Doodle","Alias": "wizard33"}
```

REST

METHOD	RESOURCE	ACTION
GET	/player	Get all players
GET	/player/:id	Get one player
POST	/player	Create
PUT	/player/:id	Create (or replace)
PATCH	/player/:id	Update (partially)
DELETE	/player/:id	Delete

OpenAPI Support

- OpenAPI 2.0 support + extensions (x-ISC)



```yaml
swagger: '2.0'
info:
  description: 'A dummy player leaderboard API'
  version: 1.0.0
  title: 'Leaderboard API'
# host: 'localhost:52773'
# basePath: /leaderboard/api/v1
tags:
  - name: player
    description: All you need to manage your players!
# schemes:
#   - http
paths:
  /player:
    post:
      tags:
        - player
      summary: Add a new player
      description: ''
      operationId: addPlayer
      consumes:
        - application/json
      produces:
        - application/json
      parameters:
        - in: body
          name: body
          description: Player object to be added
          required: true
          schema:
            $ref: '#/definitions/Player'
      responses:
        '405':
          description: Invalid input
```

Last Saved: 11:50:51 am - Oct 10, 2019 ✓ VALID

Leaderboard API

1.0.0

[Base URL: virtserver.swaggerhub.com/albertoft/leaderboard/1.0.0]

A dummy player leaderboard API

Schemes: HTTPS

player All you need to manage your players!

POST /player Add a new player

GET /player Return all players

GET /player/{playerId} Find player by ID

PUT /player/{playerId} Update an existing player

DELETE /player/{playerId} Deletes a player

OpenAPI

Developing an API

Design-First

OpenAPI → Source Code

/api/mgmnt/v2

^%REST

%REST.API
CreateApplication

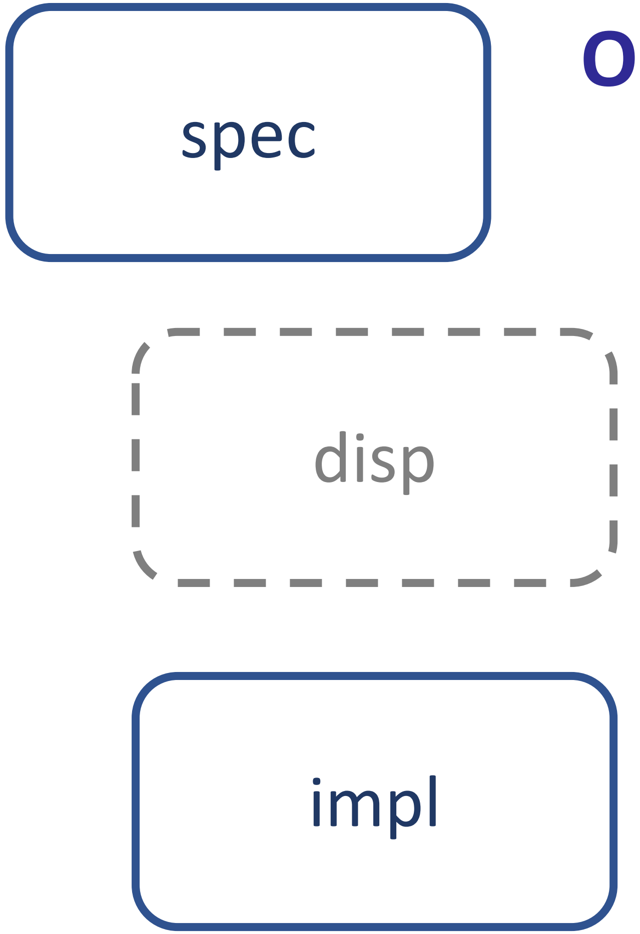
API Explorer
Open Exchange

Code-First

Source Code → OpenAPI

/api/mgmnt/

Developing an API



OpenAPI specification

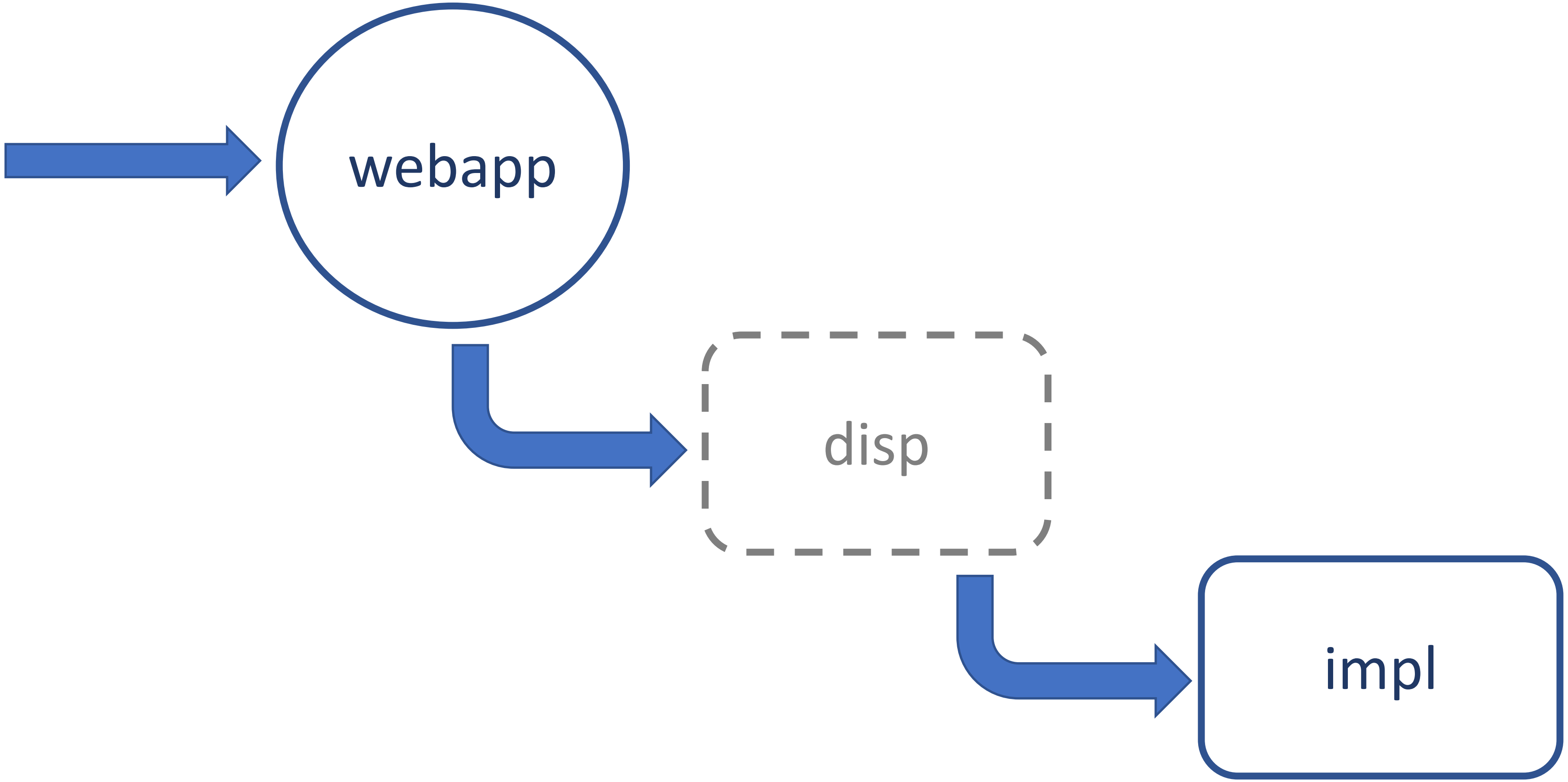
Automatically generated

Parse HTTP Request

Handle headers and HTTP Response

Implementation

Developing an API



Design

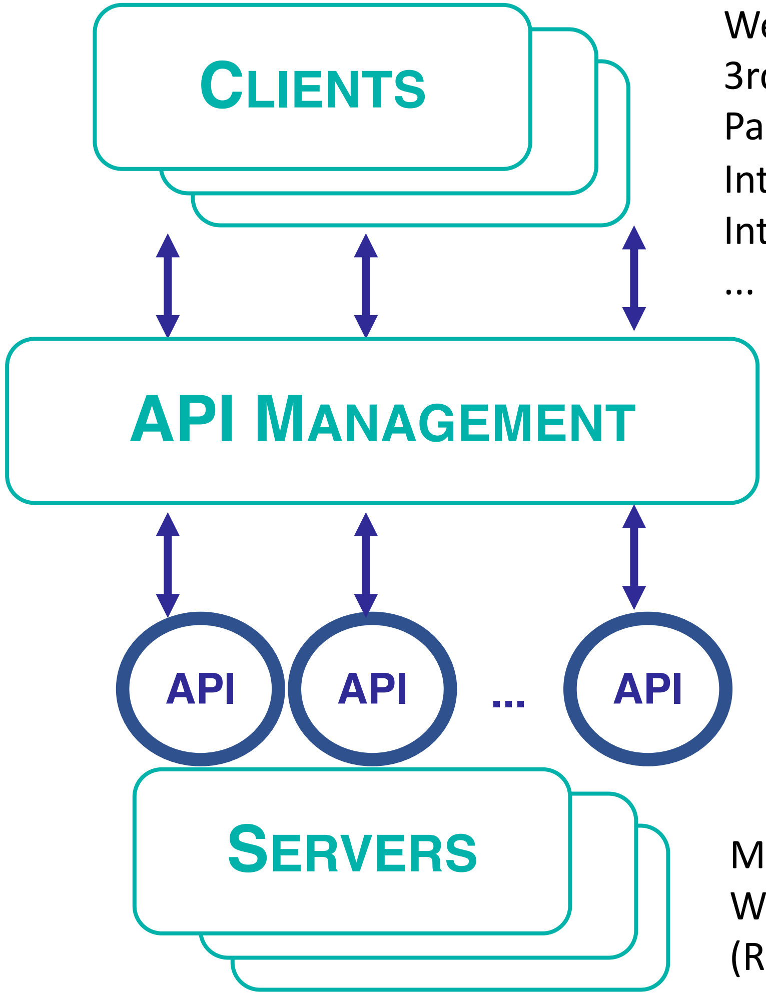
Security

Publish

Control

Monitor

Analysis



Web App / Mobile
3rd Party developers
Partners
Internal consumers
Integrations
...

Microservices
WebServices
(REST, SOAP)
ESB
...

API Management

IAM – InterSystems API Manager

- High performance
- Scalable
- Easy to deploy

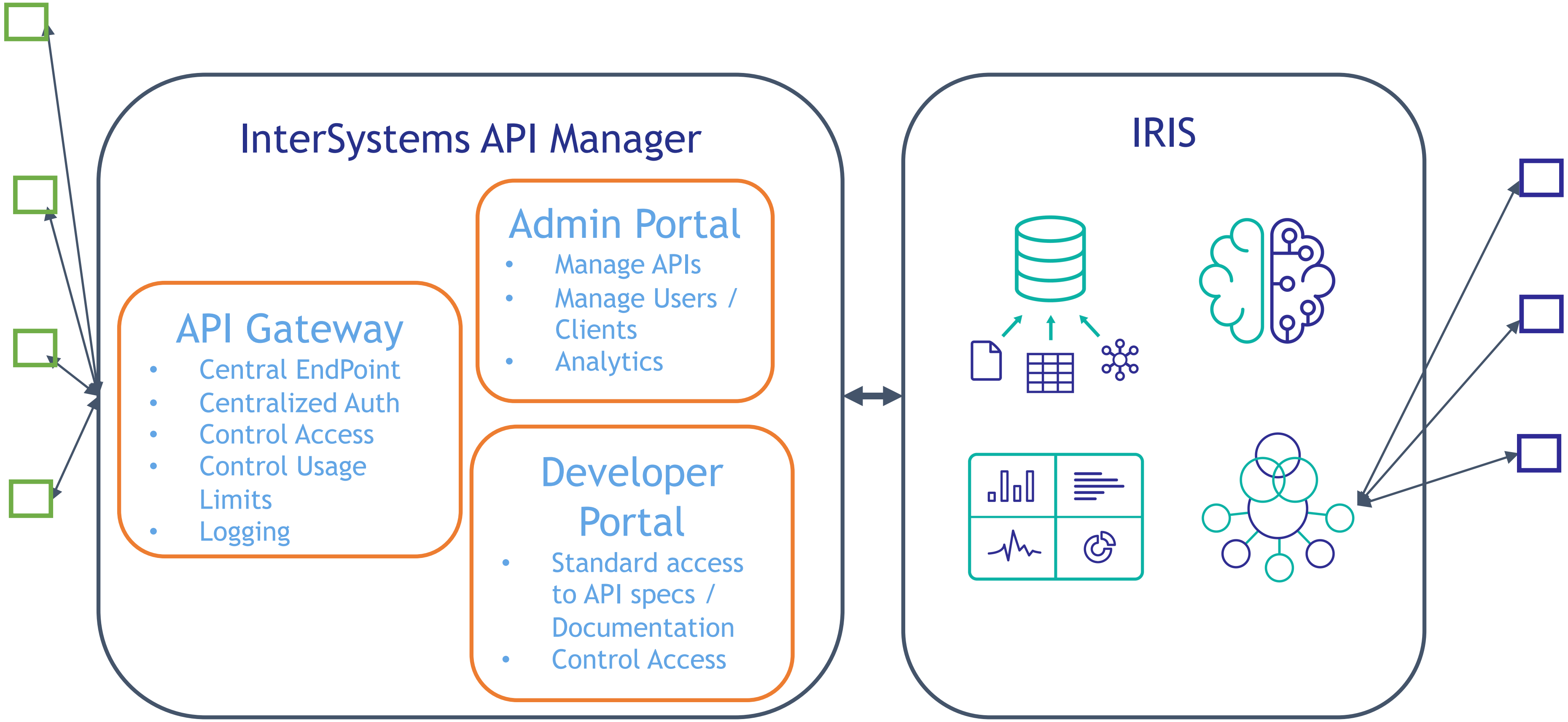
- Monitor all your API traffic in one point

- Modular
- You can extend it using *plugins* (auth, traffic control, etc.)

- *Developer Portal*
- API documentation

API Management

API Management



InterSystems API Manager

API Gateway

- Central EndPoint
- Centralized Auth
- Control Access
- Control Usage Limits
- Logging

Admin Portal

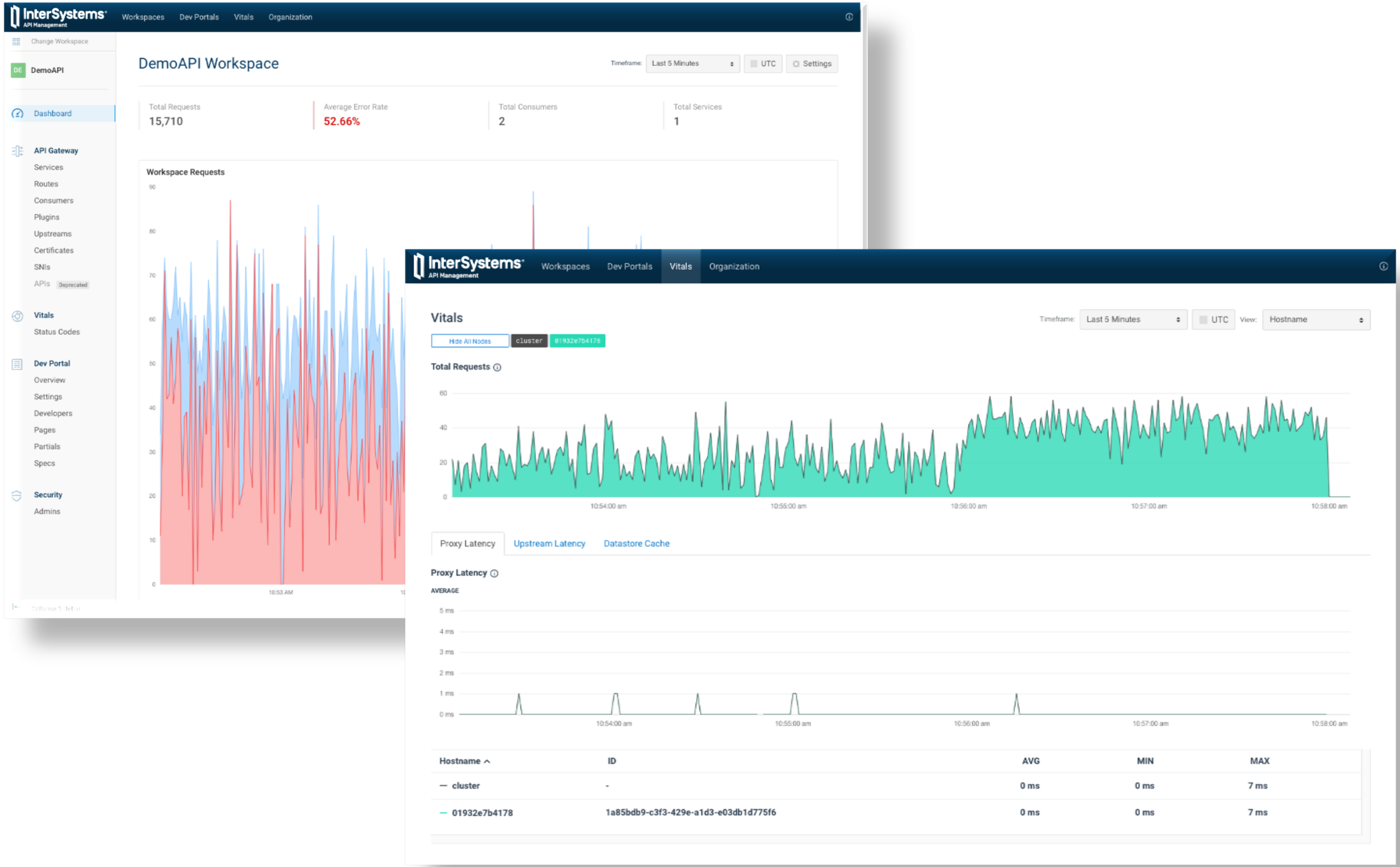
- Manage APIs
- Manage Users / Clients
- Analytics

Developer Portal

- Standard access to API specs / Documentation
- Control Access

IRIS

Monitoring



DemoAPI Workspace

Timeframe: Last 5 Minutes | UTC

Total Requests	Average Error Rate	Total Consumers	Total Services
15,710	52.66%	2	1

Vitals

Timeframe: Last 5 Minutes | UTC | View: Hostname

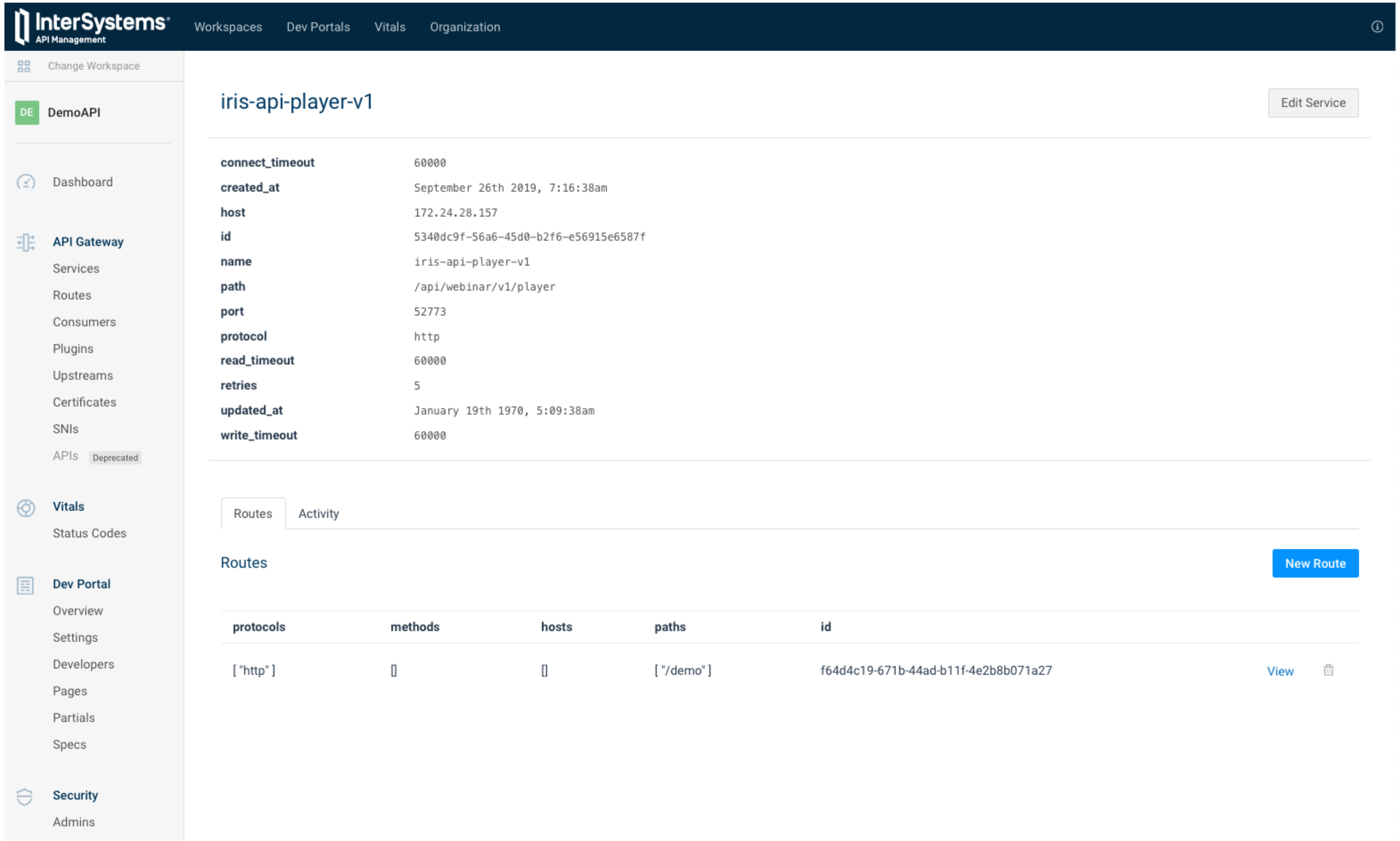
Total Requests

Proxy Latency

Hostname	ID	AVG	MIN	MAX
— cluster	-	0 ms	0 ms	7 ms
— 01932e7b4178	1a85bdb9-c3f3-429e-a1d3-e03db1d775f6	0 ms	0 ms	7 ms

API Management

Management: UI / REST API

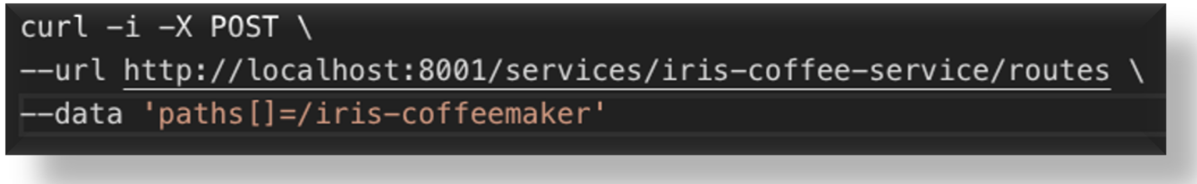


iris-api-player-v1

connect_timeout	60000
created_at	September 26th 2019, 7:16:38am
host	172.24.28.157
id	5340dc9f-56a6-45d0-b2f6-e56915e6587f
name	iris-api-player-v1
path	/api/webinar/v1/player
port	52773
protocol	http
read_timeout	60000
retries	5
updated_at	January 19th 1970, 5:09:38am
write_timeout	60000

Routes

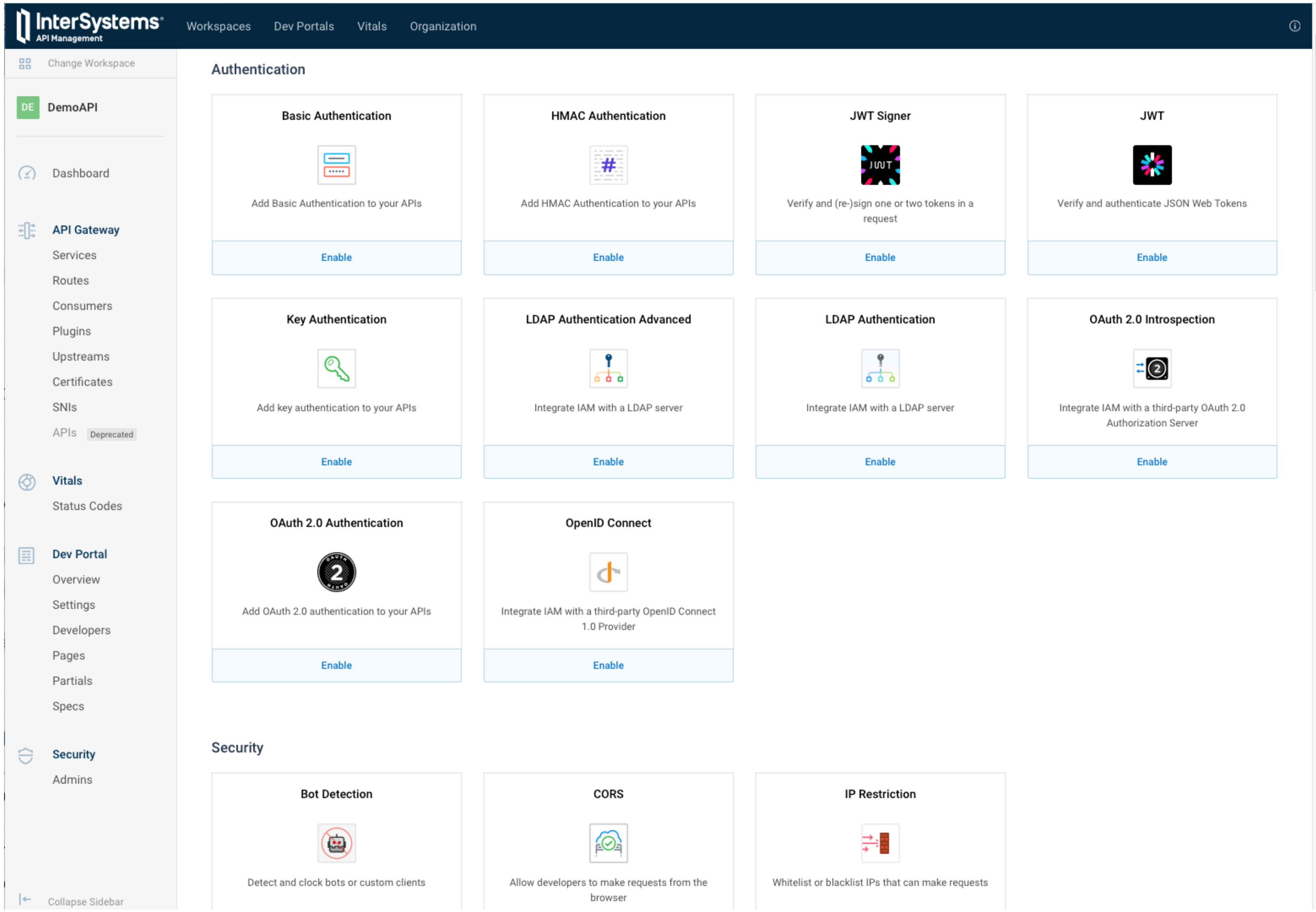
protocols	methods	hosts	paths	id
["http"]	[]	[]	["/demo"]	f64d4c19-671b-44ad-b11f-4e2b8b071a27



```
curl -i -X POST \
--url http://localhost:8001/services/iris-coffee-service/routes \
--data 'paths[]=/iris-coffeemaker'
```

API Management

Plugins



InterSystems API Management

Workspaces Dev Portals Vitals Organization

Change Workspace

DE DemoAPI

Dashboard

API Gateway
- Services
- Routes
- Consumers
- Plugins
- Upstreams
- Certificates
- SNIs
- APIs Deprecated

Vitals
- Status Codes

Dev Portal
- Overview
- Settings
- Developers
- Pages
- Partials
- Specs

Security
- Admins

Collapse Sidebar

Authentication

Basic Authentication
Add Basic Authentication to your APIs
Enable

HMAC Authentication
Add HMAC Authentication to your APIs
Enable

JWT Signer
Verify and (re-)sign one or two tokens in a request
Enable

JWT
Verify and authenticate JSON Web Tokens
Enable

Key Authentication
Add key authentication to your APIs
Enable

LDAP Authentication Advanced
Integrate IAM with a LDAP server
Enable

LDAP Authentication
Integrate IAM with a LDAP server
Enable

OAuth 2.0 Introspection
Integrate IAM with a third-party OAuth 2.0 Authorization Server
Enable

OAuth 2.0 Authentication
Add OAuth 2.0 authentication to your APIs
Enable

OpenID Connect
Integrate IAM with a third-party OpenID Connect 1.0 Provider
Enable

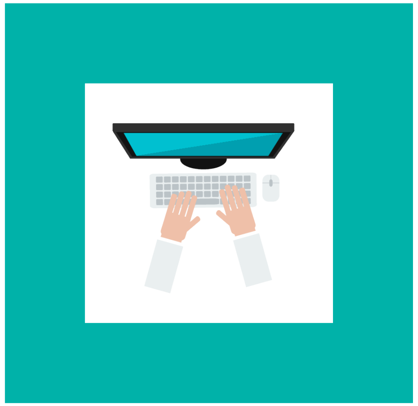
Security

Bot Detection
Detect and clock bots or custom clients

CORS
Allow developers to make requests from the browser

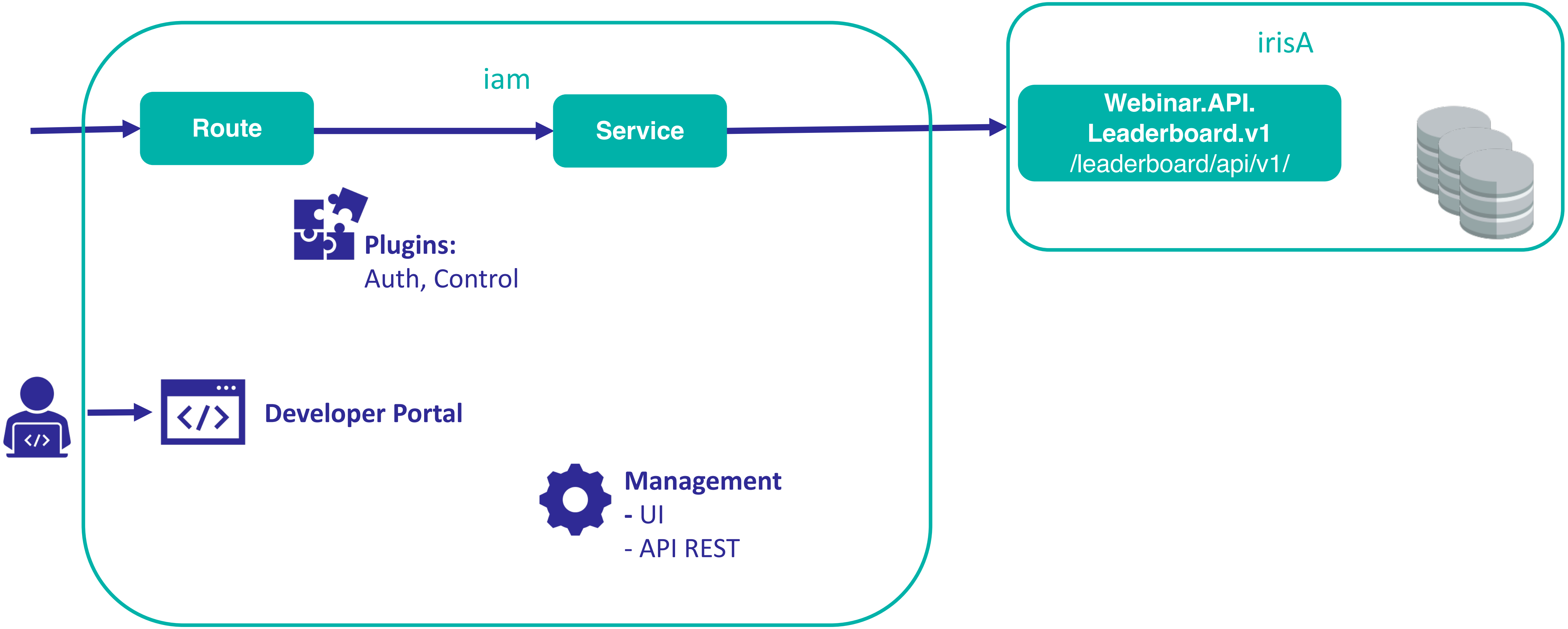
IP Restriction
Whitelist or blacklist IPs that can make requests

API Management



Hands-on: Basic Scenario

https://github.com/intersystems-ib/workshop-rest-iam



iam

Route

Service

Plugins:
Auth, Control

Developer Portal

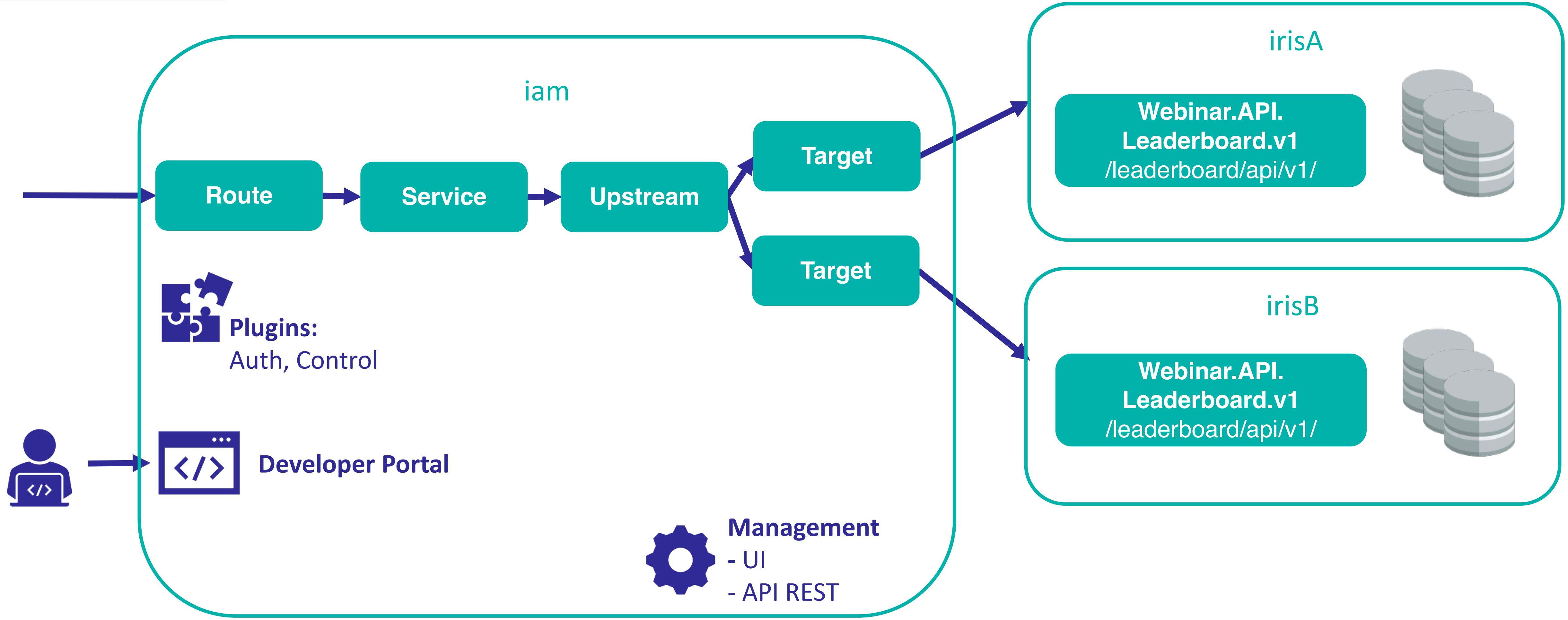
Management
- UI
- API REST

irisA

**Webinar.API.
Leaderboard.v1**
/leaderboard/api/v1/

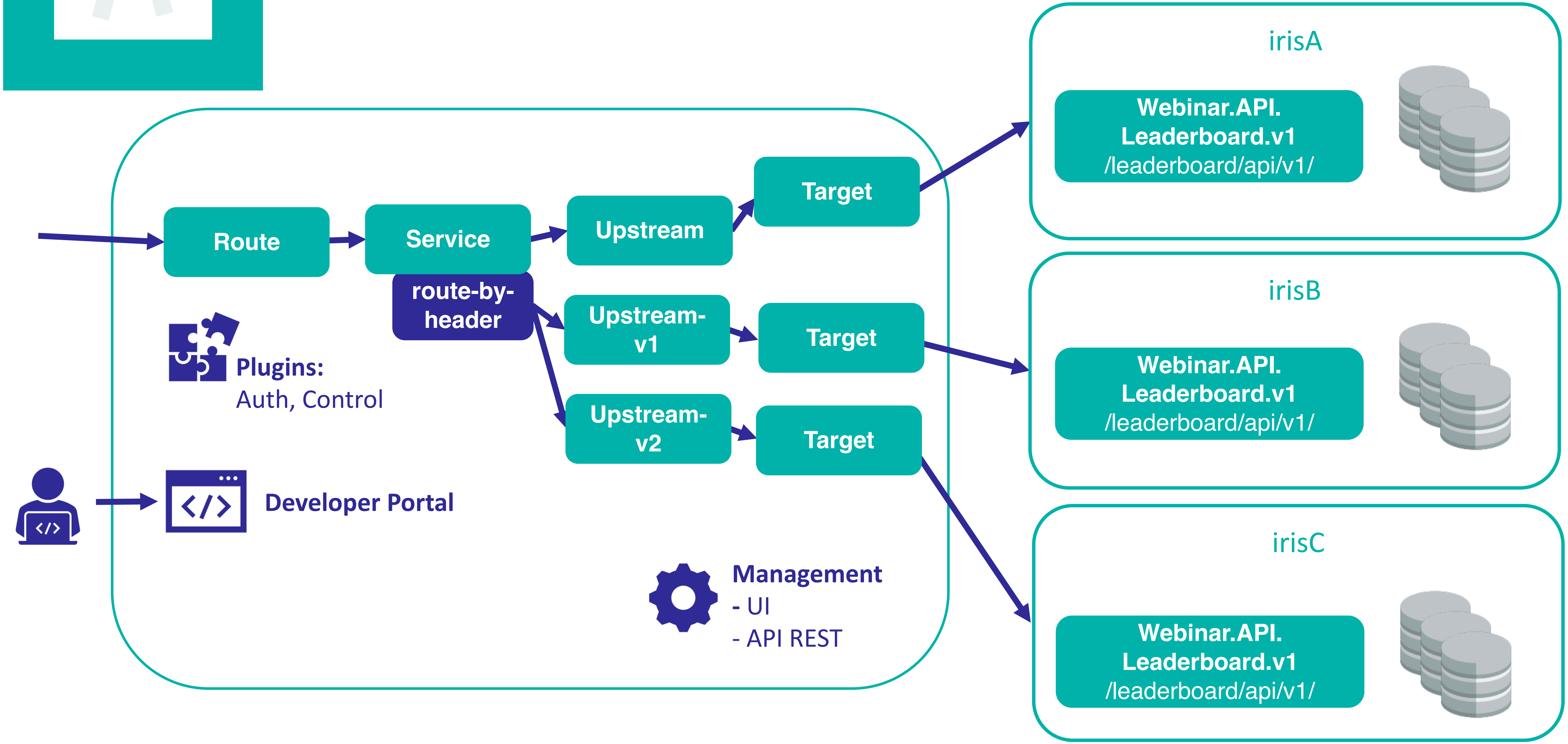
Hands-on: Load Balancing

https://github.com/intersystems-ib/workshop-rest-iam



Hands-on: Route by header

https://github.com/intersystems-ib/workshop-rest-iam



Route

Service

route-by-header

Upstream

Target

Upstream-v1

Target

Upstream-v2

Target

Plugins:
Auth, Control

Developer Portal

Management
- UI
- API REST

irisA

Webinar.API.Leaderboard.v1
/leaderboard/api/v1/

irisB

Webinar.API.Leaderboard.v1
/leaderboard/api/v1/

irisC

Webinar.API.Leaderboard.v1
/leaderboard/api/v1/