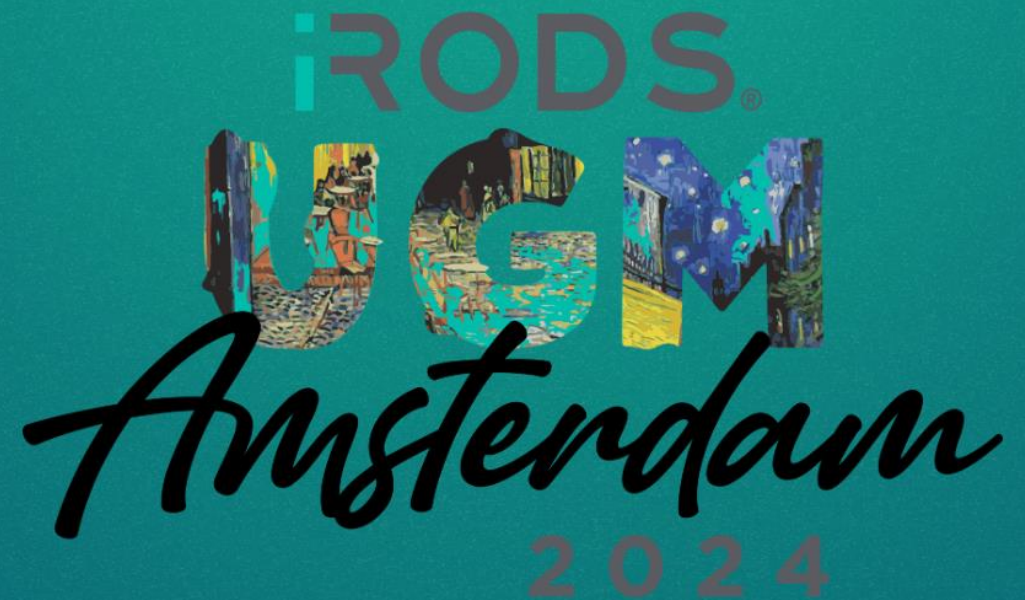


# ManGO Portal feature updates, including extension points and workflows

Paul Borgermans  
Mariana Montes  
Ingrid Barcena Roig



- iRODS PRC
- **Flask**
- Data and Metadata
  - Create Read Update Delete
  - Bulk operations

- Collections
- Search
- Metadata schemas
- Users & Groups
- Trash

tempZone » [home](#)

**photonics-lab**

[Add collection](#) [Upload files ...](#)

[Content](#) [Metadata](#) [Permissions](#)







Delete Move Copy Download Copying/Download is only available for data objects.

**2**

<input type="checkbox"/>	Name	Owner	Created	Modified	Size
<input checked="" type="checkbox"/>	<a href="#">fibre sensing</a>	paul	2024-05-24 13:25:07	2024-05-24 13:25:07	
<input type="checkbox"/>	<a href="#">holographic interferometry</a>	paul	2024-05-24 13:25:29	2024-05-24 13:25:29	
<input type="checkbox"/>	<a href="#">INGEST</a>	paul	2024-05-24 13:26:32	2024-05-24 13:26:32	
<input checked="" type="checkbox"/>	<a href="#">non_linear_optics</a>	paul	2024-05-24 13:25:43	2024-05-24 13:25:43	
<input type="checkbox"/>	<a href="#">radiation sensing</a>	paul	2024-05-24 13:26:06	2024-05-24 13:26:06	

# ManG user and group management

## Current groups

 public	
 baton-rouge	
 photonics-lab	

[Add group](#)

## Create New User in Group ×



photonics-lab

User name

Password

[cancel](#) [ok](#)

# ManG<sup>o</sup> user and group management

 **photonics-lab** 

[Create New User in Group photonics-lab](#)

### Current members

- paul
- mariana
- terrell
- kory
- alan

[Remove selected users](#)

### Other users

- rods
- markus
- daniel
- ingrid

[Add selected users](#)

[Delete group](#)

# ManGO ACL's

tempZone » home

photronics-lab

Add collection Upload files ...

Content Metadata Permissions

Inheritance

User / Group	Access level	Zone	Recursive
baton-rouge (rodsgroup)	read_object	tempZone	<input checked="" type="checkbox"/>
photronics-lab (rodsgroup)	own	tempZone	<input type="checkbox"/>

Groups: baton-rouge Rights: Own  Recursive Apply

# ManGO Metadata Schemas

- Enriched metadata types
- Nested, repeatable composite fields
- JSON import/export
- Component library

Choose a pre-made form element. ✕

From [Schema.org/ResearchProject](https://schema.org/ResearchProject).

- Author
- Contributor
- Contact
- Software
- Research project**
- Observation

**Research project**  
Research project, as described in [Schema.org](https://schema.org)

**Project code**  
Project code, as described in [Schema.org](https://schema.org)

**Project name\***  
Project name, as described in [Schema.org](https://schema.org)

**Description**  
Project description, as described in [Schema.org](https://schema.org)

**Funder**  
Funder, as described in [Schema.org](https://schema.org)

[Add "Research project"](#) [Cancel](#)

Metadata schema(s) for photonics-lab

[View schema](#)

Article (2022)

[View](#) [Add](#) [Download JSON](#) [Download](#)

Reference ID  
article:2022

Schema Label  
Article (2022)

**Title**

Input type: text

**Author**

ID for widget (underlying label)  
author

Label for widget (display name)  
Author

Description  
Helpful description

**Name**

Input type: text

**Affiliation**

ID for widget (underlying label)  
affiliation

Label for widget (display name)  
Affiliation

Description  
Helpful description

**Name**

Input type: text

**Institute**

Class or type of Institution

IRI Instance

IRI

Name Class

[Add Instance](#)

Repeating

[Update](#)

[Add Instance](#)

Repeating

[Update](#)

[Add Instance](#)

[Save draft](#) [Publish](#)

# Extension points / customizations

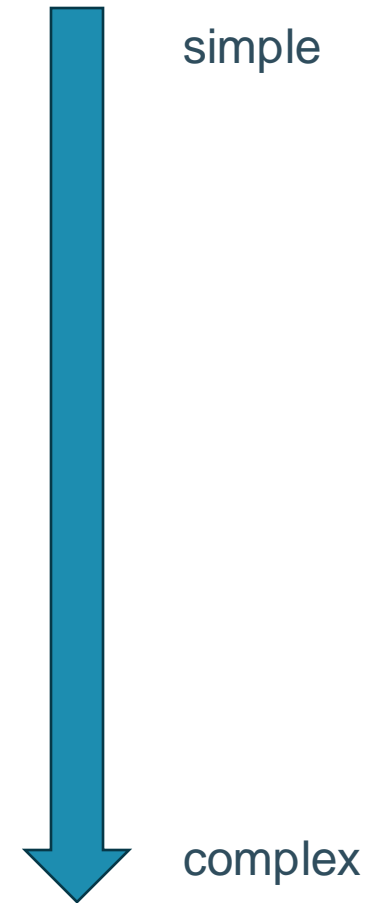
Starting from ManGO portal generic version



Photo by [Michele Bitetto](#) on [Unsplash](#)

# The gist for extending ManGO portal

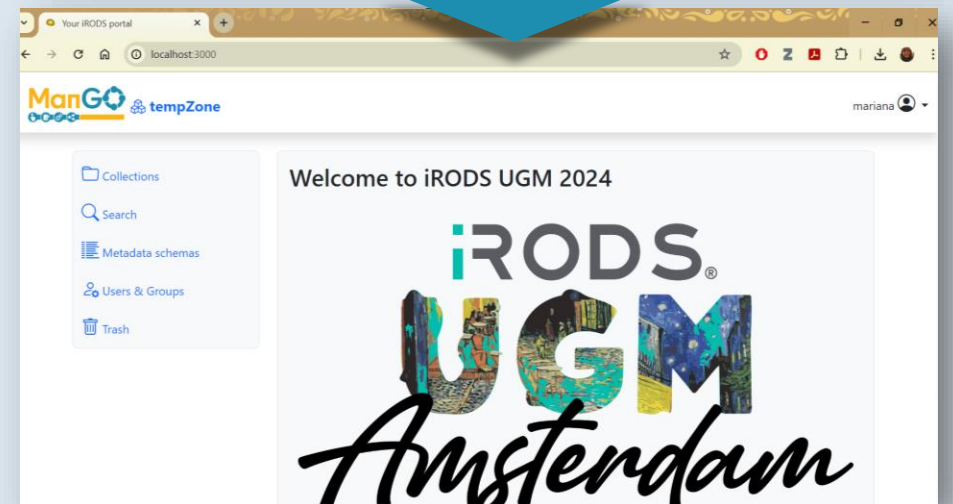
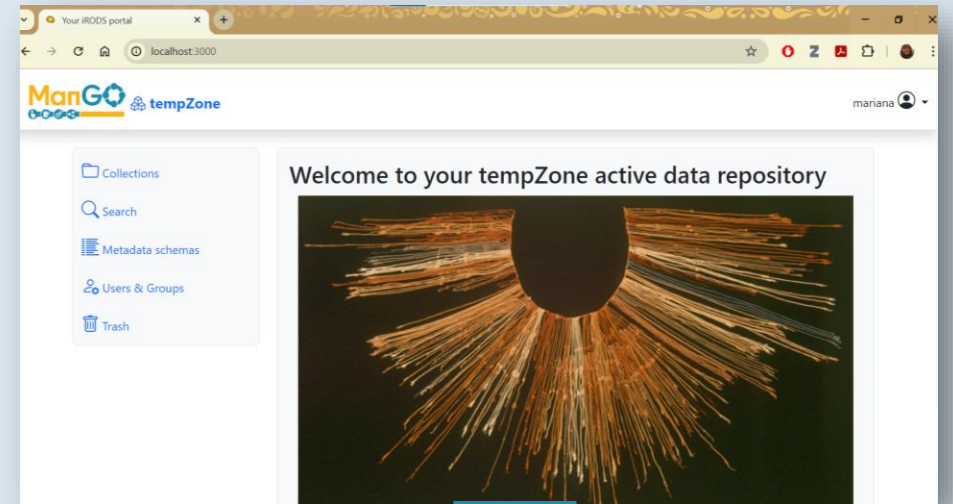
- Configuration directives
- Template overrides (Flask/Jinja2)
- Core class overrides
  - Config
  - Code
- Flask blueprints
  - All of the above
  - Extend / Override anything
- Workflows





# Change landing page: template override

```
view_template = get_template_override_manager(  
    g.irods_session.zone  
)  
.get_template_for_catalog_item(  
    g.irods_session.collections.get(f"/{g.irods_session.zone}"),  
    "index.html.j2"  
)
```



# Override a template

```
index.html.j2 ×
src > templates > index.html.j2
1 {% extends "base.html.j2" %}
2 {% block body %}
3 ...
4 <h2>Welcome to your {{ g.irods_session.zone }} active data repository</h2>
```



```
index_ugm.html.j2 ×
src > templates > index_ugm.html.j2
1 {% extends "base.html.j2" %}
2 {% block body %}
3 ...
4 <h2>Welcome to iRODS UGM 2024</h2>
```

```
! template_override_rules_basic.yml ×
src config > ! template_override_rules_basic.yml
17 view_new_landing:
18     source: index.html.j2
19     target: index_ugm.html.j2
20     matches: always
```

Your iRODS portal

localhost:3000

ManGO tempZone

mariana

Collections

Search

Metadata schemas

Users & Groups

Trash

Welcome to iRODS UGM 2024

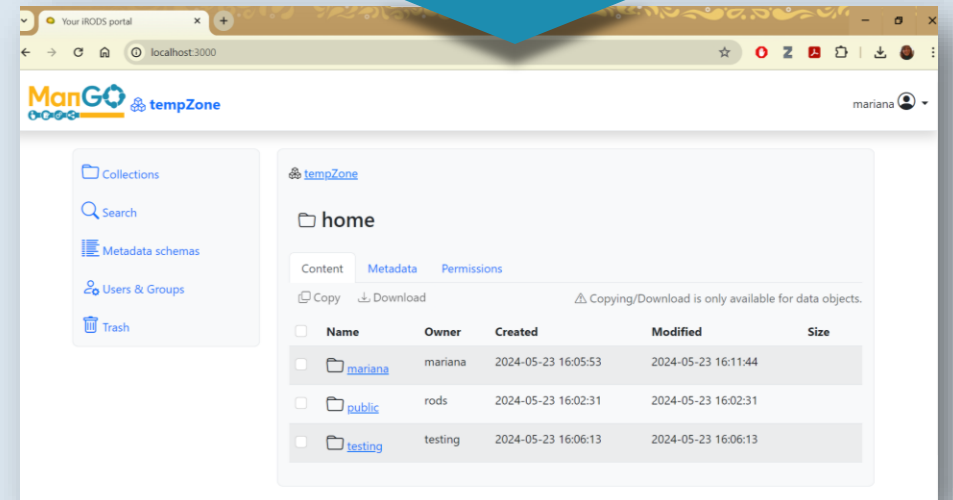
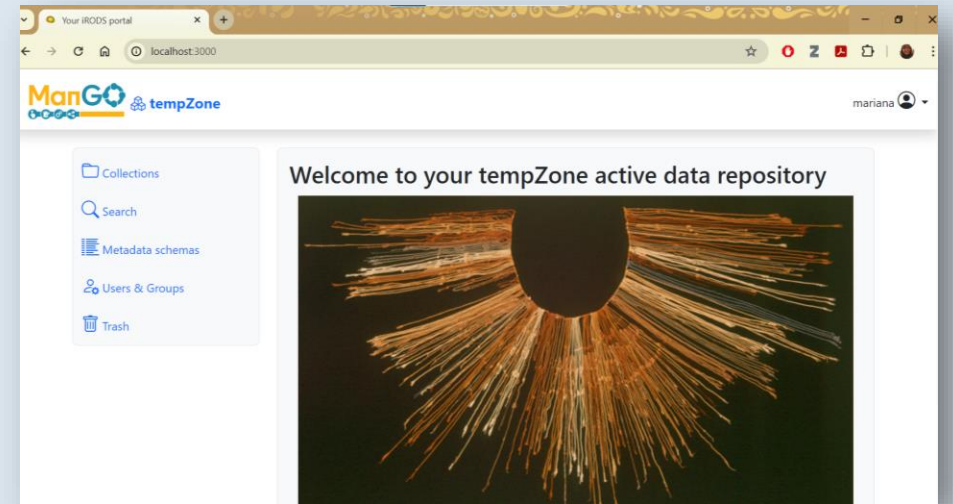
iRODS®

UGM

Amsterdam

# Change landing page: route

```
@app.route("/")  
def index():
```



# Change landing route

 *config\_basic.py* ×

src >  config\_basic.py

```
45
46     MANGO_MAIN_LANDING_ROUTE = {"module": "kernel.common.browse", "function": "index"}
47
```



 *config\_basic.py* ×

src >  config\_basic.py

```
45
46     MANGO_MAIN_LANDING_ROUTE = {"module": "kernel.common.browse", "function": "collection_browse"}
47
```

Your iRODS portal x +

localhost:3000

ManGO tempZone

mariana

[Collections](#)

[Search](#)

[Metadata schemas](#)

[Users & Groups](#)

[Trash](#)

[tempZone](#)

**home**

Content Metadata Permissions

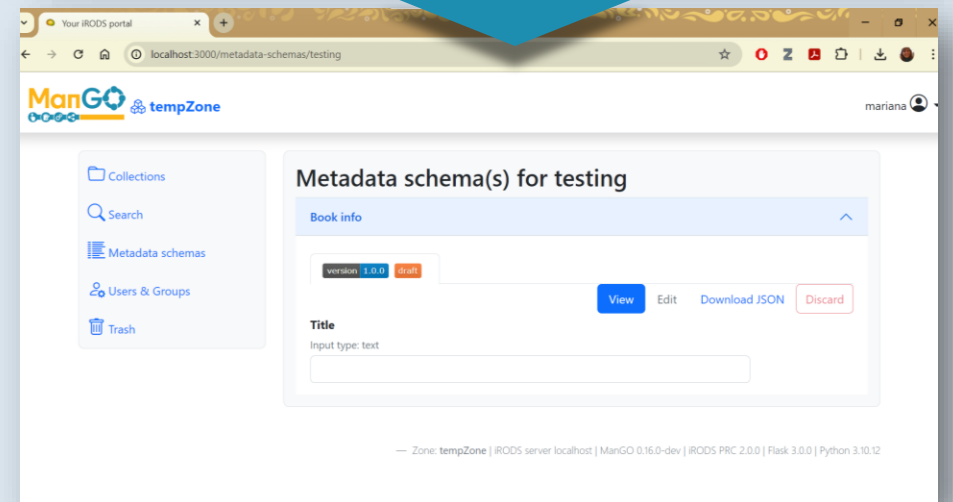
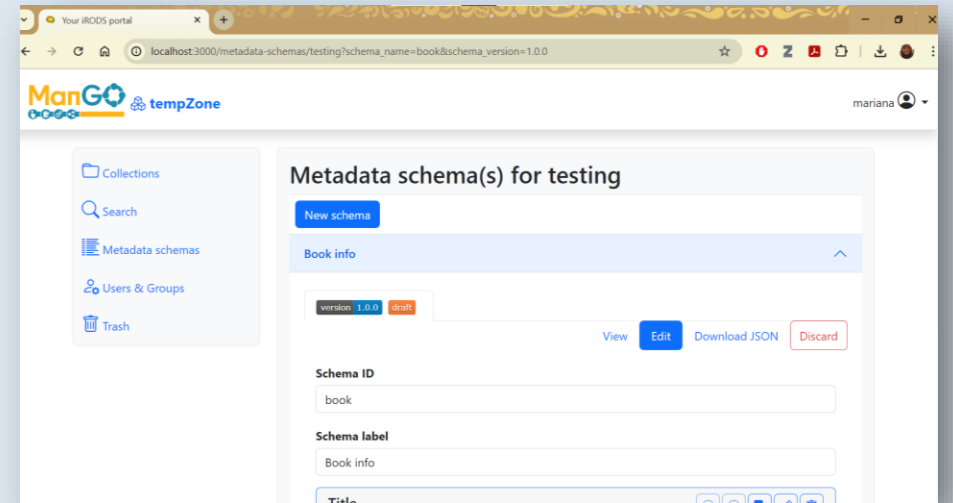
Copy Download ⚠ Copying/Download is only available for data objects.

<input type="checkbox"/>	Name	Owner	Created	Modified	Size
<input type="checkbox"/>	<a href="#">mariana</a>	mariana	2024-05-23 16:05:53	2024-05-23 16:11:44	
<input type="checkbox"/>	<a href="#">public</a>	rods	2024-05-23 16:02:31	2024-05-23 16:02:31	
<input type="checkbox"/>	<a href="#">testing</a>	testing	2024-05-23 16:06:13	2024-05-23 16:06:13	

# Change behaviour: class overrides

Change authorization rules for the metadata schema manager

```
class GroupBasedSchemaPermissions(BaseSchemaPermissionsManager):  
    def __init__(self, zone: str, realm: str):
```



Your iRODS portal

localhost:3000/metadata-schemas/testing?schema\_name=book&schema\_version=1.0.0

**ManGO** tempZone

mariana

- Collections
- Search
- Metadata schemas
- Users & Groups
- Trash

## Metadata schema(s) for testing

**New schema**

Book info

version 1.0.0 draft

View **Edit** Download JSON Discard

**Schema ID**  
book

**Schema label**  
Book info

**Title**



# Change behavior with a plugin

Python module

```
▼ mango_overrides  
  > templates/mango_overrides  
  + __init__.py  
  + schema_permissions.py
```

+ config\_basic.py ×

src > + config\_basic.py

```
54 MANGO_SCHEMA_PERMISSIONS_MANAGER_CLASS = {  
55     "module": "plugins.mango_overrides.schema_permissions",  
56     "class": "GroupBasedSchemaPermissions",  
57 }
```

- Collections
- Search
- Metadata schemas
- Users & Groups
- Trash

## Metadata schema(s) for testing

Book info

version 1.0.0 draft

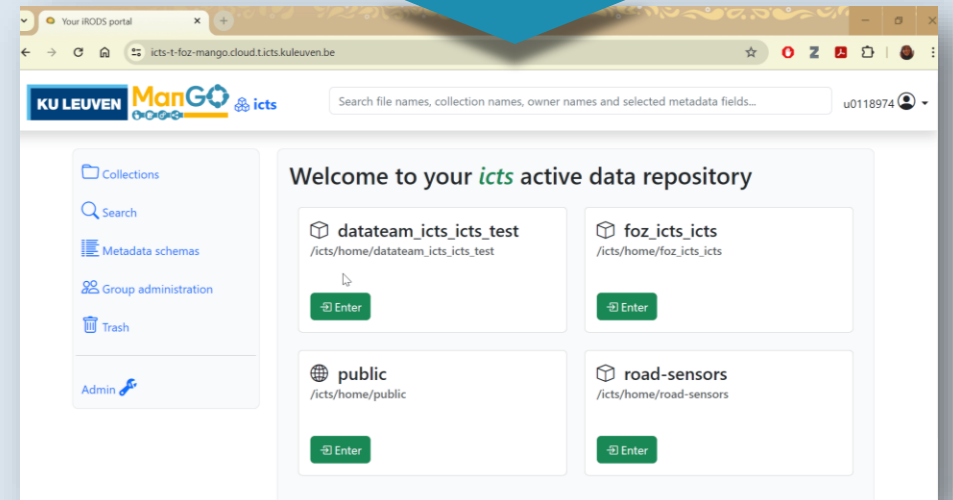
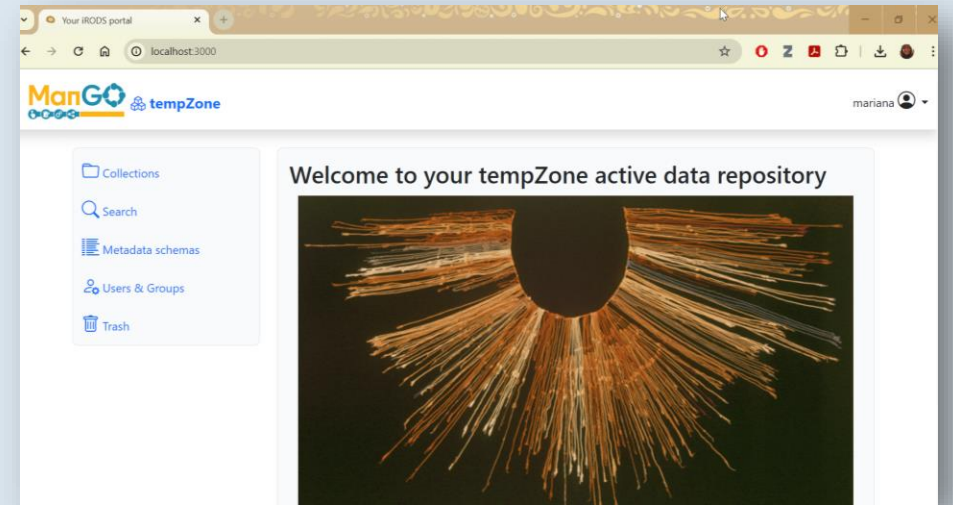
[View](#) [Edit](#) [Download JSON](#) [Discard](#)

Title

Input type: text

# Bring everything together

KU Leuven project-based setup in ManGO



Your iRODS portal x +

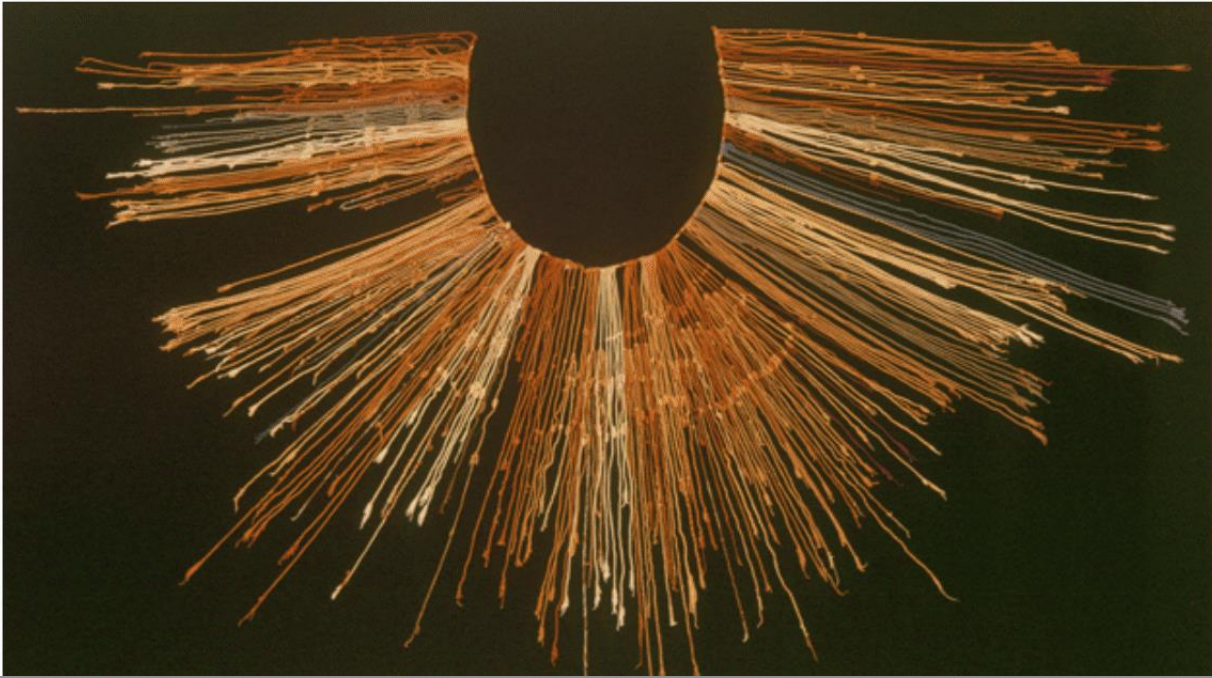
localhost:3000

ManGO tempZone

mariana

- Collections
- Search
- Metadata schemas
- Users & Groups
- Trash

## Welcome to your tempZone active data repository



# user\_tantra plugin

`config_basic.py` ×

src > `config_basic.py`

```
20 MANGO_PLUGIN_BLUEPRINTS = [  
21     {  
22         "module": "plugins.user_tantra.realm",  
23         "blueprint": "user_tantra_realm_bp",  
24     }  
25 ]  
...  
45 MANGO_MAIN_LANDING_ROUTE = {  
46     "module": "plugins.user_tantra.realm",  
47     "function": "index",  
48 }
```

Python module

```
user_tantra  
└─ templates/user_tantra  
   ├── index.html.j2  
   ├── sidebar.html.j2  
   ├── __init__.py  
   └── realm.py
```

Template override

`! template_override_rules_basic.yml` ×

src > config > `! template_override_rules_basic.yml`

```
17 realm_powered_sidebar:  
18     source: sidebar.html.j2  
19     target: user_tantra/sidebar.html.j2  
20     matches: always
```

Your iRODS portal


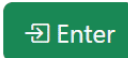

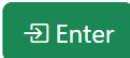

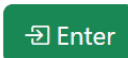

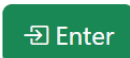
icts-t-foz-mango.cloud.t.icts.kuleuven.be

KU LEUVEN **ManGO** icts

Search file names, collection names, owner names and selected metadata fields... u0118974

### Welcome to your *icts* active data repository

- Collections**
- Search**
- Metadata schemas**
- Group administration**
- Trash**
- Admin**

 <b>datateam_icts_icts_test</b> /icts/home/datateam_icts_icts_test 	 <b>foz_icts_icts</b> /icts/home/foz_icts_icts 
 <b>public</b> /icts/home/public 	 <b>road-sensors</b> /icts/home/road-sensors 



# Technical

- Python Celery based
- (Chained) action(s) aka flows
- Different workers
  - Typical **iRODS**® operations
  - Domain specific
  - Scalability
    - Eg metadata extraction from multi GB files
    - HPC for complex/long calculations
- Broker
  - Apache Kafka + ...





# Drivers

- ManGO portal actions
  - User initiated workflow actions

- Cronjobs
  - Celery implementation
- Any other client

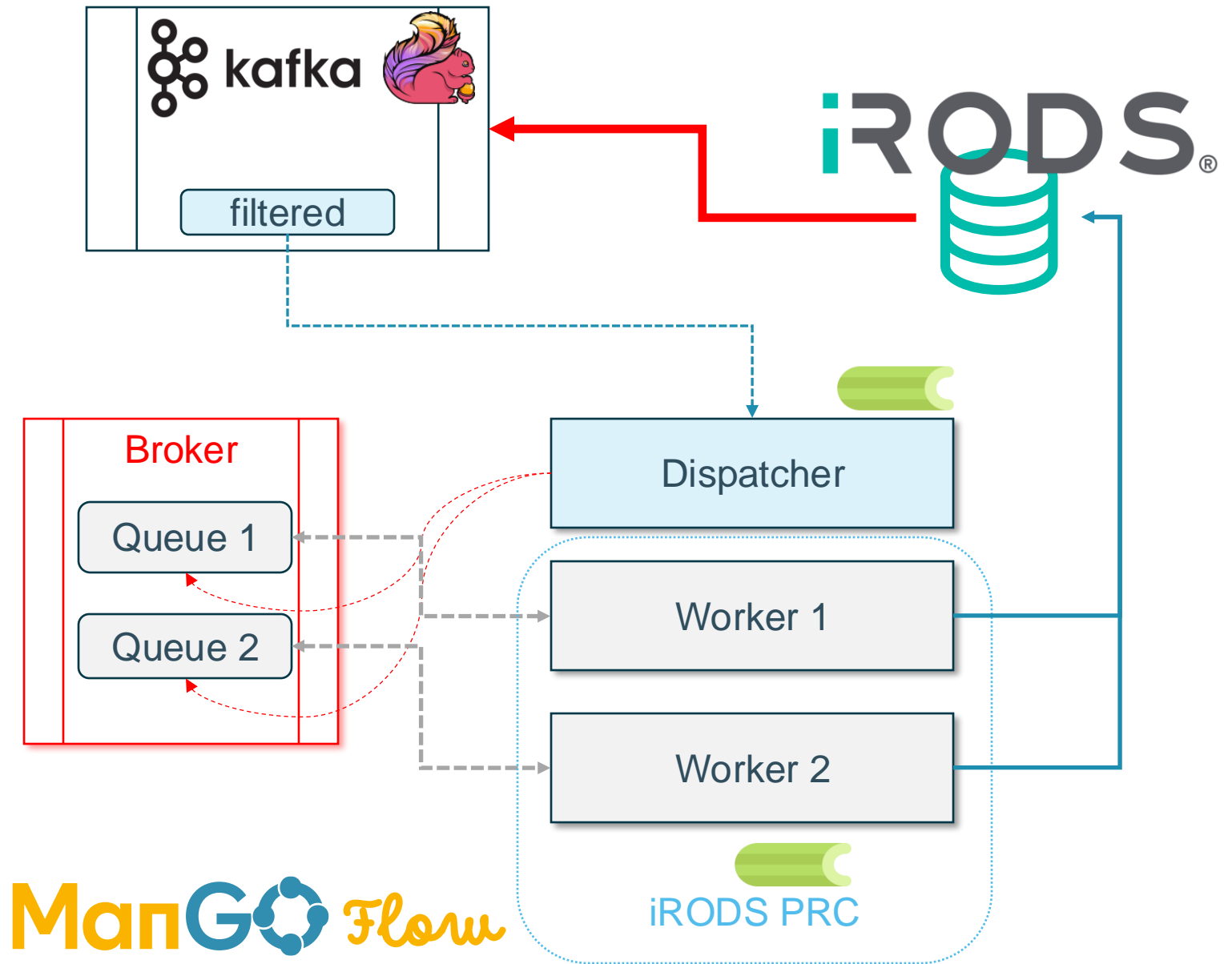


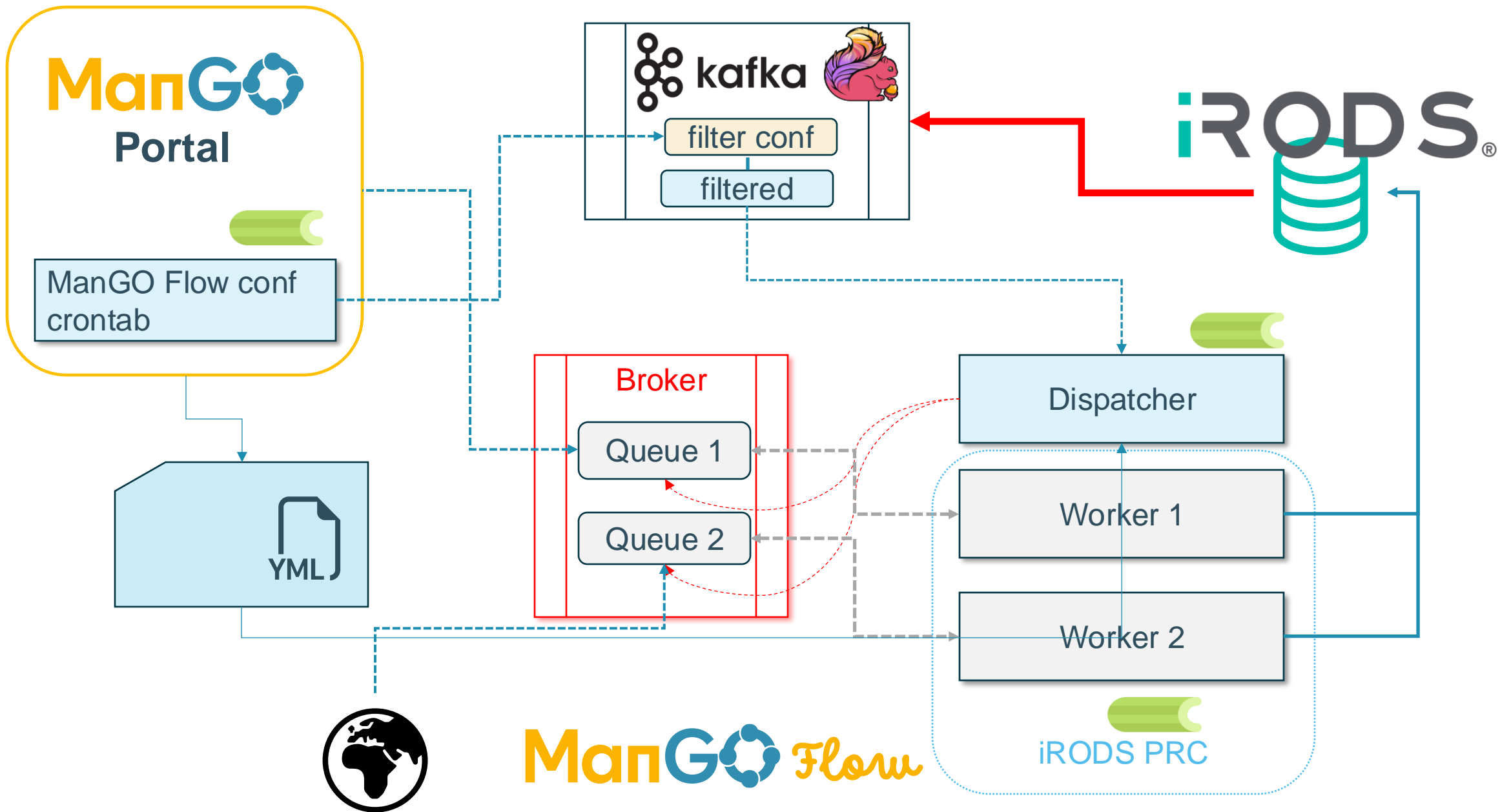
- Custom apps

iRODS®

- iRODS filtered event listener (via Apache Kafka)
- Dispatcher based on configuration

# Listen to selected iRODS changes





# Flows

- Initial filter:
  - Subtree path\*
  - Metadata
- Input path elements
  - Fine grained filtering
  - Potential variables
- Flow types
  - Ingestion / movement
  - Metadata extraction
    - From path
    - Text header
    - Tika
  - ...

```
ingest_u0123318:
  match:
    subtree: /set/home/u0123318
    metadata:
      - 'mg.status': 'validated'
  flow:
    actions:
      - 'mango_flow.irods.ingest_move_data_object':
          parameters:
            src:
              path: 'gallery/planet-{{subfolder}}/{{dataobject:.\.jpg}}'
            dst:
              path: 'images/{{subfolder}}/{{dataobject}}'
```



# Thank You!

[paul.borgermans@kuleuven.be](mailto:paul.borgermans@kuleuven.be)  
[mariana.montes@kuleuven.be](mailto:mariana.montes@kuleuven.be)  
[ingrid.barcenaroig@kuleuven.be](mailto:ingrid.barcenaroig@kuleuven.be)

<https://github.com/kuleuven/mango-portal>

