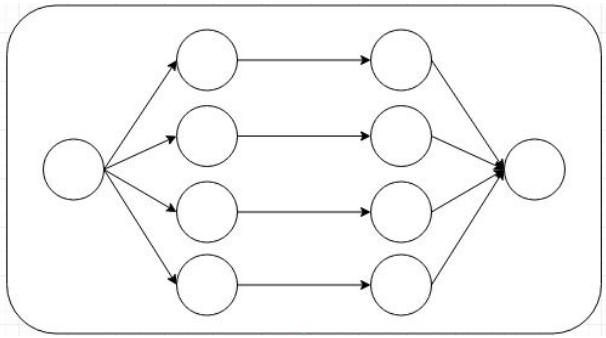
Criando um pipeline no Portal I

Setup e conceitos básicos



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Outline

- Instâncias do portal
- Setup inicial
- Estudo do pipeline example_objectscount
- Versionamento de código: testing e production

Instâncias do portal (Ambientes)

- testing - ambiente usado para dataset menores pois os recursos computacionais são reduzidos
  - Compartilha a infraestrutura com o portal dos desenvolvedores
  - Cluster com 4 nós de processamento
- production - ambiente usado para fazer ciência
  - loginicx - 20 nós de processamento
  - rocks - 42 nós de processamento

Setup inicial

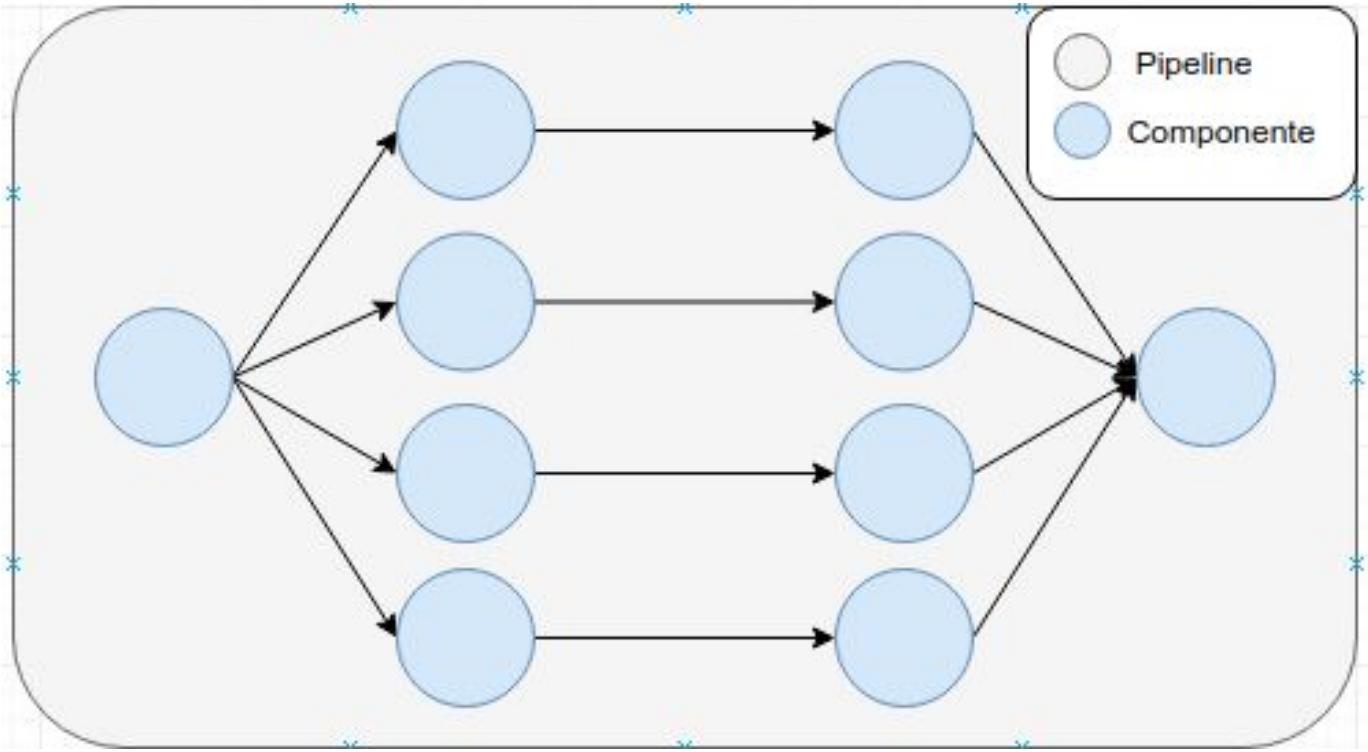
- Tutorial disponível em:
  - https://devel2.linea.gov.br/~lucas.nunes/site/

Pré-requisitos:

- acesso ao servidor de desenvolvimento
- conhecimento básico de linux
- git
- python

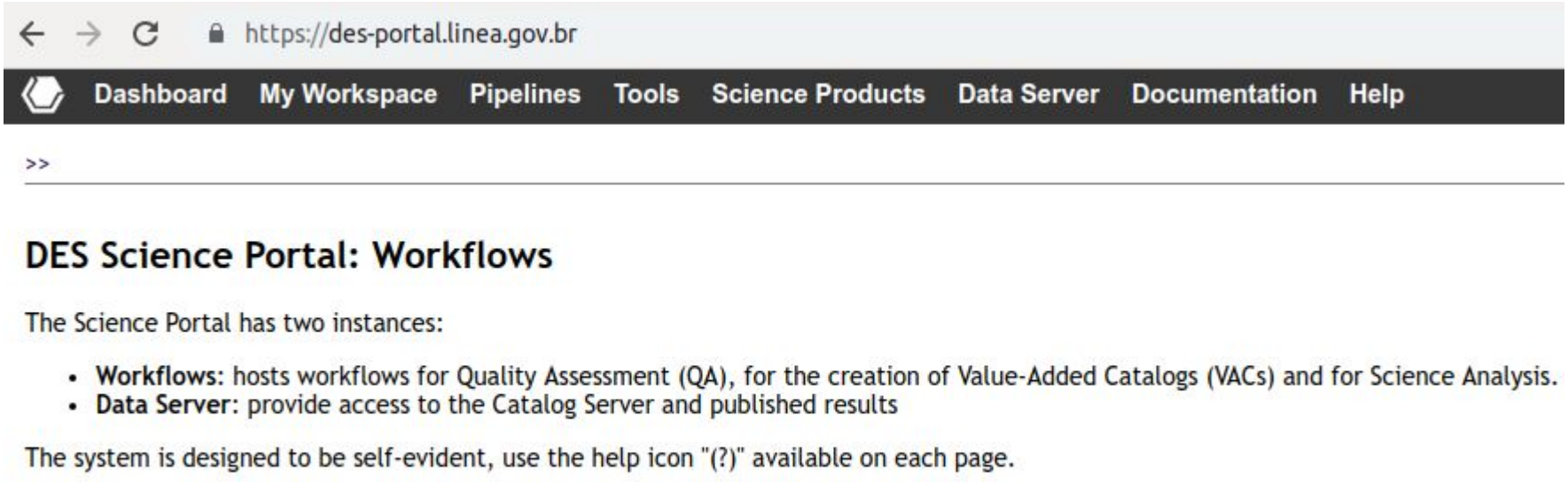
Repositório de códigos

- $PORTAL_ROOT/des/pipelines/
- $PORTAL_ROOT/des/components/



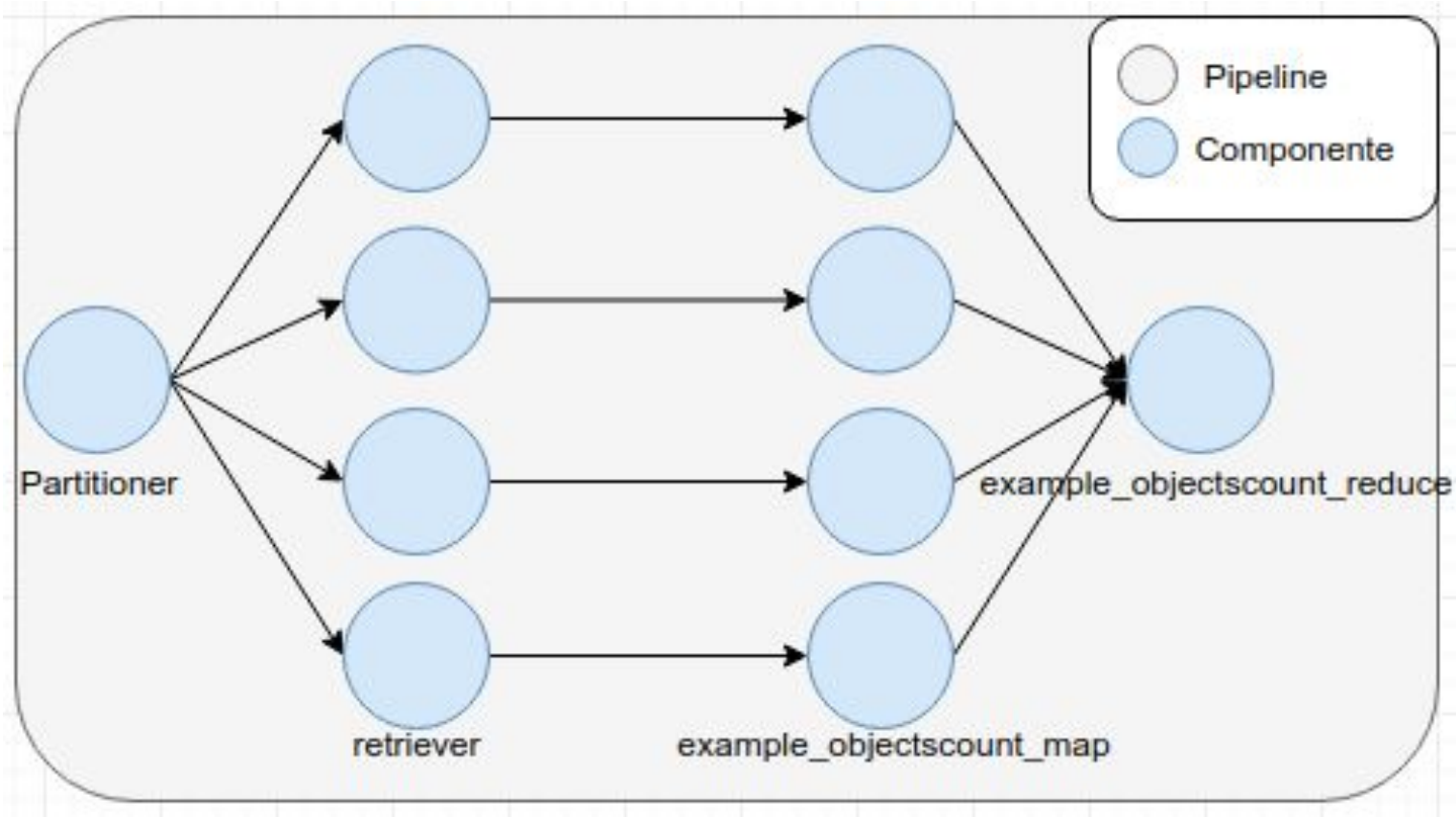
Repositório de códigos

- $PORTAL_ROOT/pypeline/
- $PORTAL_ROOT/scienceportal/



Estudo do pipeline example_objectscount

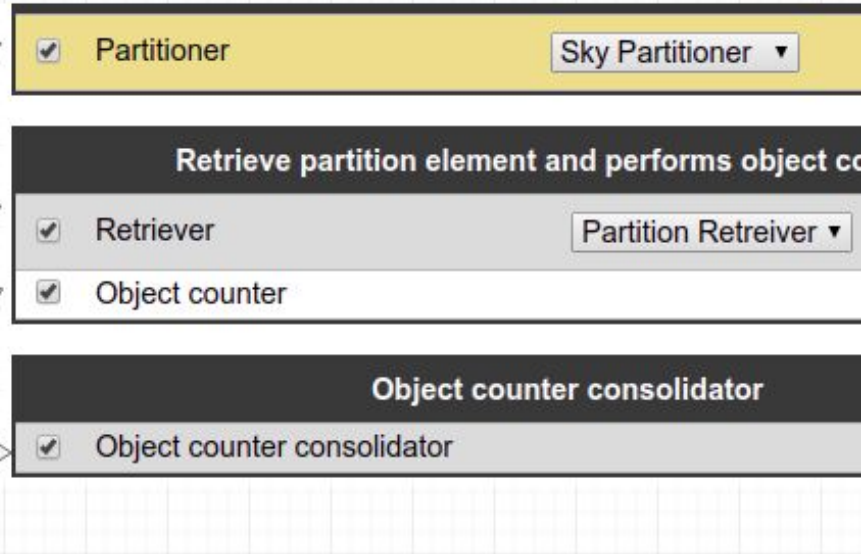
- Motivação



Estudo do pipeline example_objectscount

- Pipeline.xml
  - Fluxo de execução dos componentes
  - Dependência entre componentes

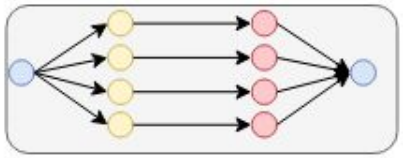
```
<?xml version="1.0" encoding="UTF-8"?>
<pipeline name="Objects Count">
...
    <task id="partitioner" flow="1toN">
            <component id="sky_partitioner"/>
...
    <task id="retriever" flow="1to1">
            <component id="partition_retriever"/>
...
    <task id="example_objectscount_map" flow="1to1">
            <component id="example_objectscount_map"/>
...
    <task id="example_objectscount_reduce" flow="Nto1">
            <component id="example_objectscount_reduce"/>
</pipeline>
```



Estudo do pipeline example_objectscount

- Comunicação entre componentes

```
self.put_file_1_1(
    path=fits_file,
    file_class="science",
    mime_type="application/fits-table",
    local_scratch_area_only=True
)
```



```
<task id="example_objectscount_map" name="Object counter" config="no" checked="checked" flow="1to1">
  <components>
    <!-- Reads MULTIPLE "science" "application/fits-table" file of a partition element -->
    <component id="example_objectscount_map" name="Object counter" multithreaded="False" />
  </components>
  <dependencies>
    <dependency id="retriever">
      <file class="science" mimetype="application/fits-table" optional="False" />
    </dependency>
  </dependencies>
</task>
```

```
input_file_list = self.io.getFileListByMimeClass(
    file_class="science",
    file_mime="application/fits-table"
)
self.info("Input files: '%s'" % self.to_str(input_file_list))
```

Estudo do pipeline example_objectscount

- Declaração input/output de pipelines

```
<input>
    <product class="coadd_objects" optional="True" />
    <product class="bcc_objects" optional="True"/>
    <product class="mice_objects" optional="True"/>
</input>
```

```
<output>
    <product class="vac_generic" />
    <product class="vac_lss" />
    <product class="vac_ge" />
    <product class="vac_ga" />
    <product class="vac_cluster" />
    <product class="footprint_map" />
</output>
```

Estudo do pipeline example_objectscount

- Product Log

```
self.put_parameter(
    section="Total count result",
    name="Total objects",
    value=total_objects
)

for element in partition_elements:
    self.put_parameter(
        section="Count results per file",
        name=element["name"],
        value=element["n_objects"]
    )
```

Total count result	
Total objects	313380

Count results per file	
6833_rows_1_to_128	128
6833_rows_129_to_256	128
6812_rows_1_to_103	103
6812_rows_104_to_206	103
6812_rows_207_to_309	103
6812_rows_310_to_412	103
6812_rows_413_to_515	103
6812_rows_516_to_618	103
6812_rows_619_to_721	103
6812_rows_722_to_824	103
6812_rows_825_to_927	103

Estudo do pipeline example_objectscount

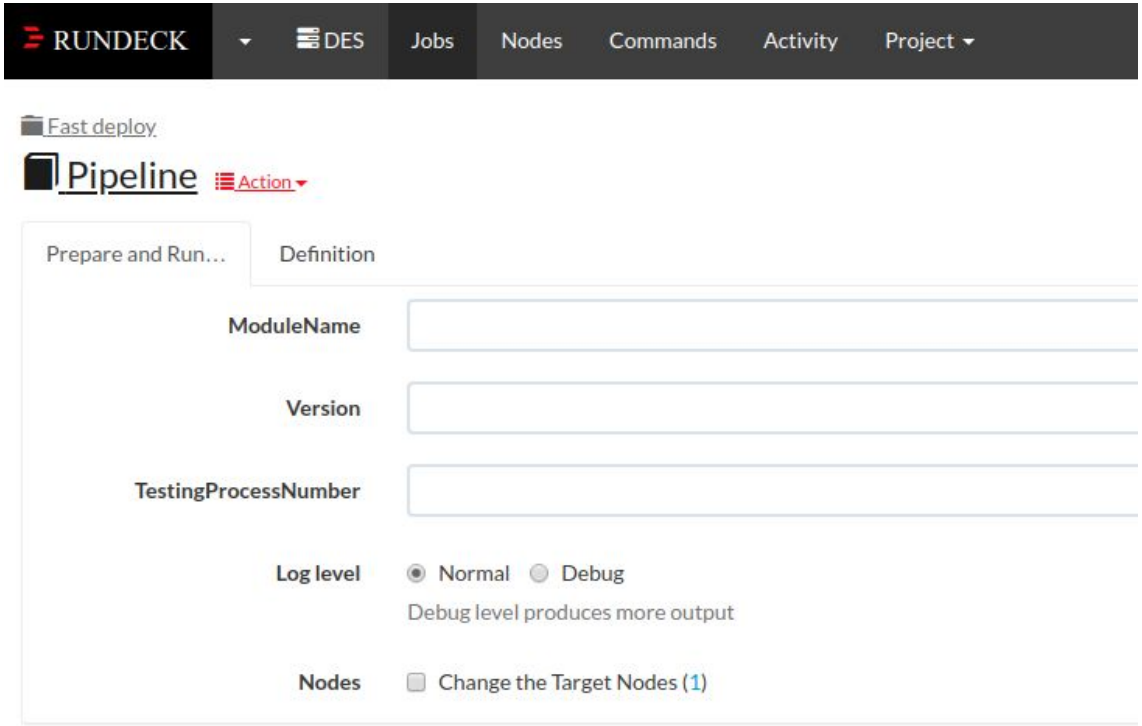
- Depuração de código
  - /mnt/scratch/users/<user>/master_des/<process_id>
  - 1 pasta por job *_sandbox
  - python -c "import components.<component_name> as a; a.run()"

Versionamento de código

- fluxo de desenvolvimento local
  - git pull
  - git checkout -b new_branch
  - git commit -a -m "new feature"
  - git checkout master
  - git merge new_branch
- levar mudanças para repositŕorio central
  - git add ChangeLog VERSION
  - git commit -m "explanation"
  - git tag `cat VERSION`
  - git push --tag

Versionamento de código

- testing - script to update
  - sudo -H -u testing -i /home/testing/update_portal.sh
- production - fast deploy



Questões

Obrigado