

Abims⁴

02/07/2014

Private Blast

Using Galaxy

By Emma Prudent

Presented by Gildas Le Corguillé

v 1.00

UPMC
SORBONNE UNIVERSITÉS



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Private Data

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v 1.00

UPMC
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WHO?

- Christophe Caron (head)
- Erwan Corre
- Gildas Le Corguillé

- Emma Prudent – 3 months internship



- Christophe Caron
- Erwan Corre
- Gildas Le Corguillé

- Emma Prudent – 3 months internship



Who?



CNRS UPMC

Station Biologique Roscoff

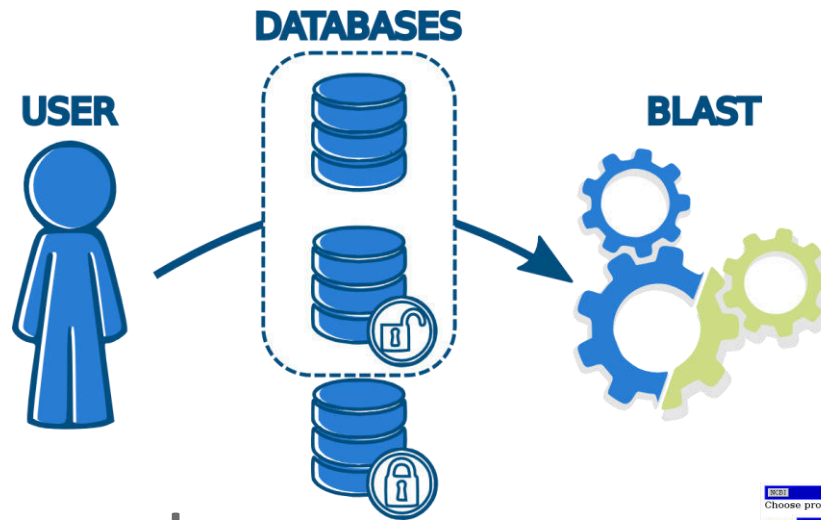
WHY?

- Teams

- Need to blast on there own data

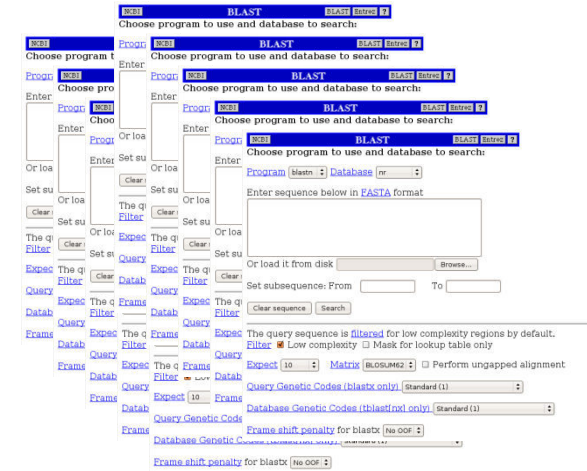
- ~~Share~~

- ~~Publish~~



- State of the art

n wwwblast instances

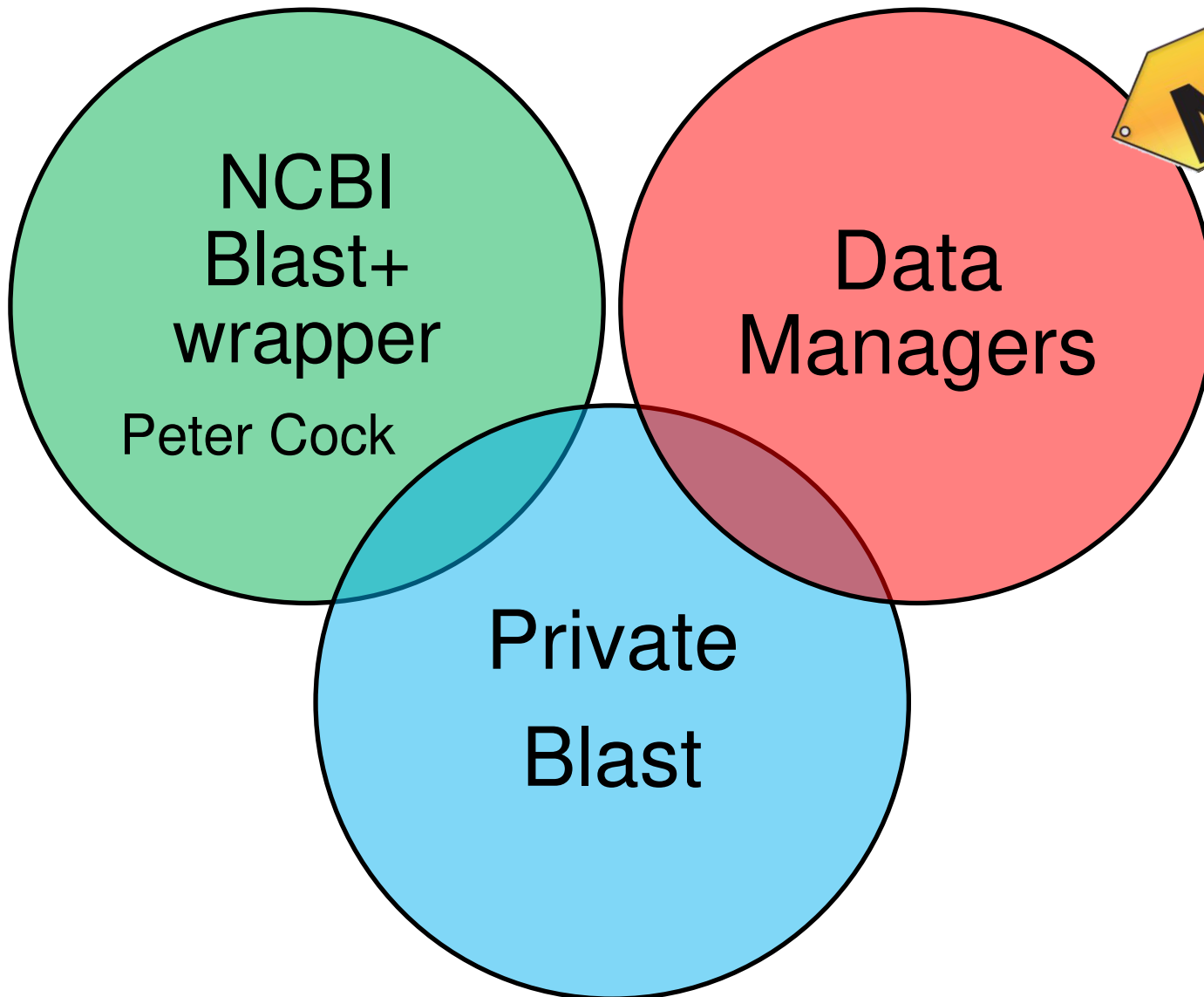


WHAT?

- Restricted access to resources
- Multi-bank querying
- Different output formats
- blastdbcmd to retrieve hits sequences
- Enhanced blast graphical outputs
- Decrease the maintenance time → automate

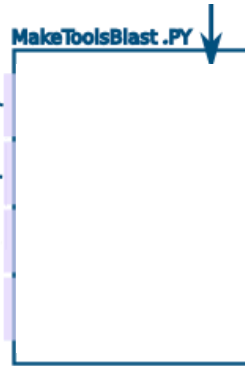


What?

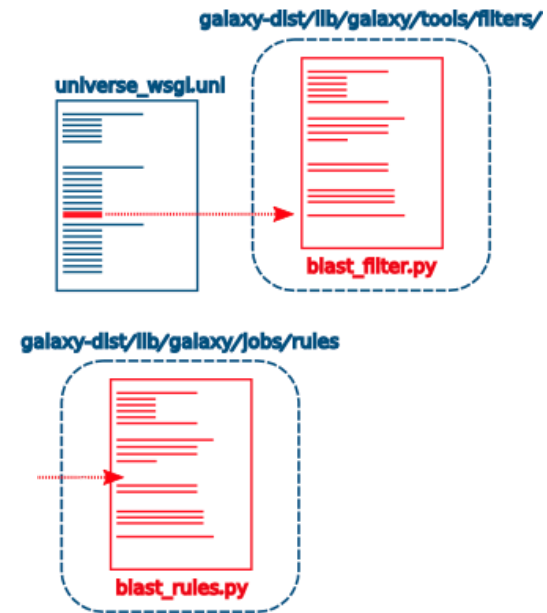
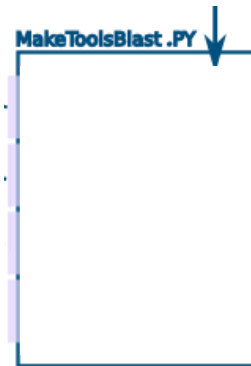


HOW?

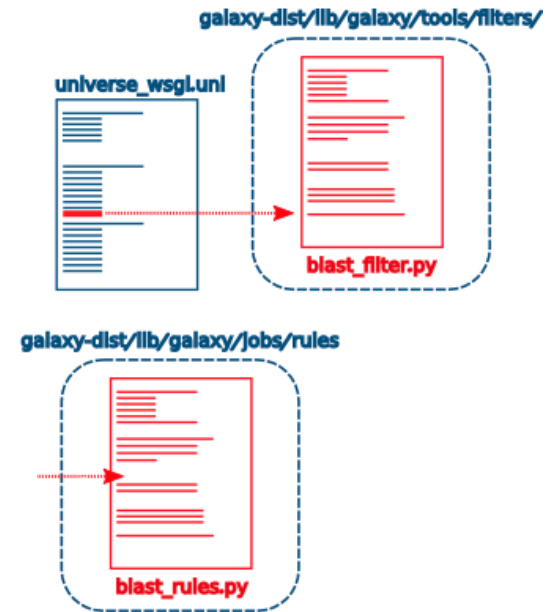
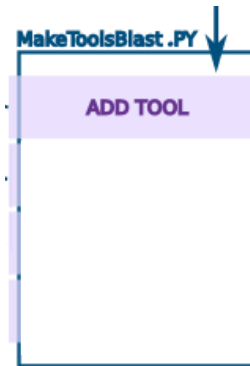
Restricted access – How?



Restricted access – How?

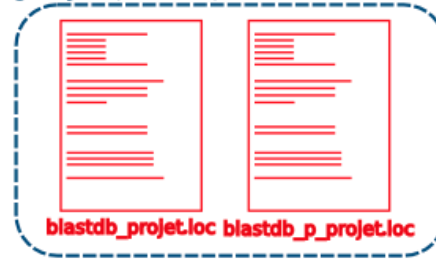


Restricted access – How?



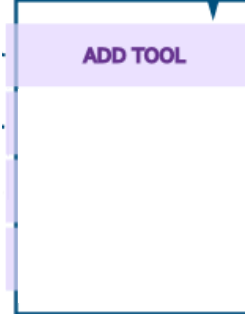
Restricted access – How?

galaxy-dist/tool-data/



ProjectName
ListUsersLogin
URL galaxy
ApiKey

MakeToolsBlast.PY

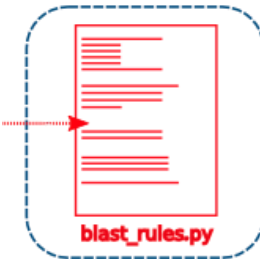


galaxy-dist/lib/galaxy/tools/filters/

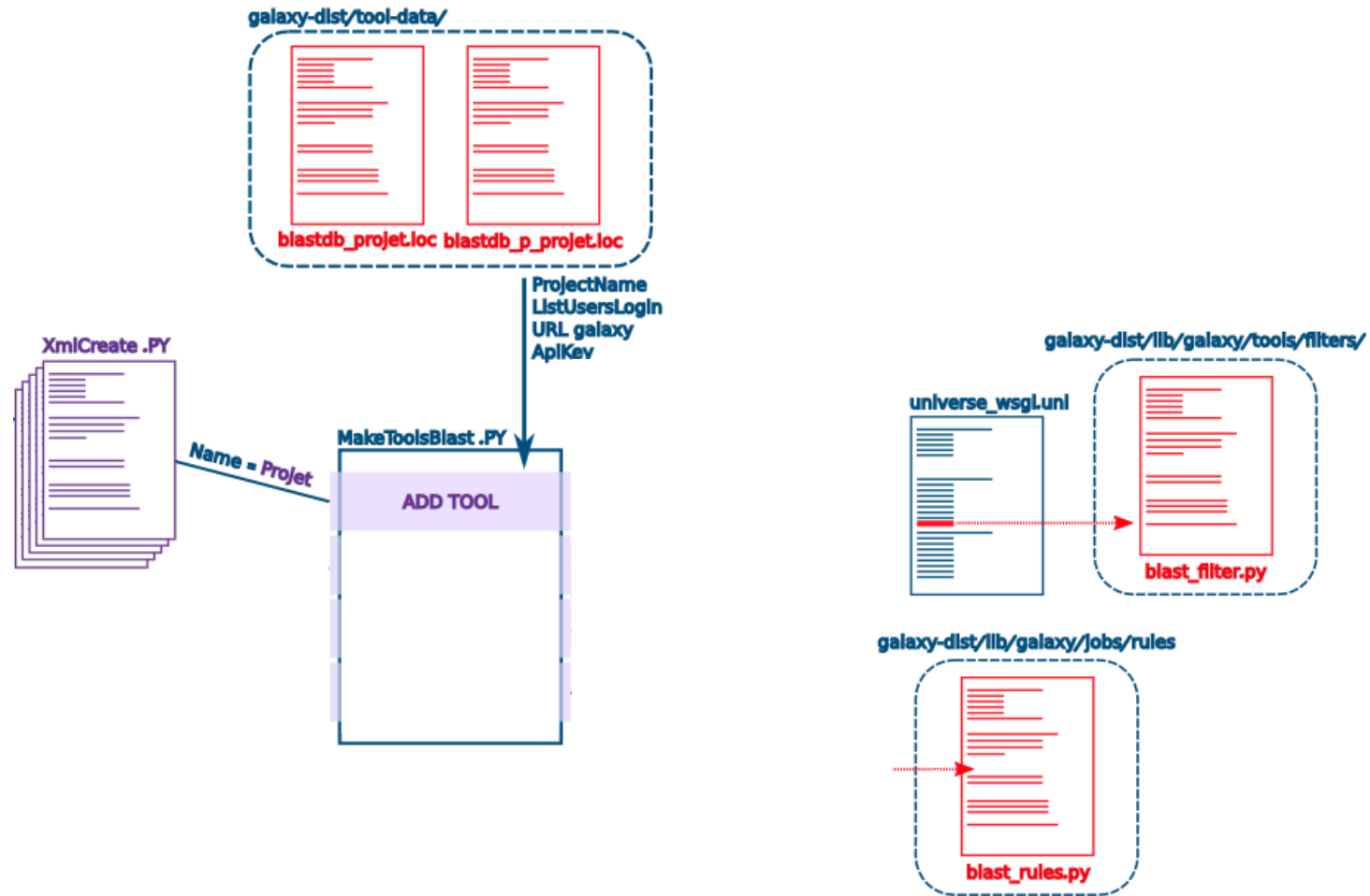
universe_wsgLuni



galaxy-dist/lib/galaxy/jobs/rules

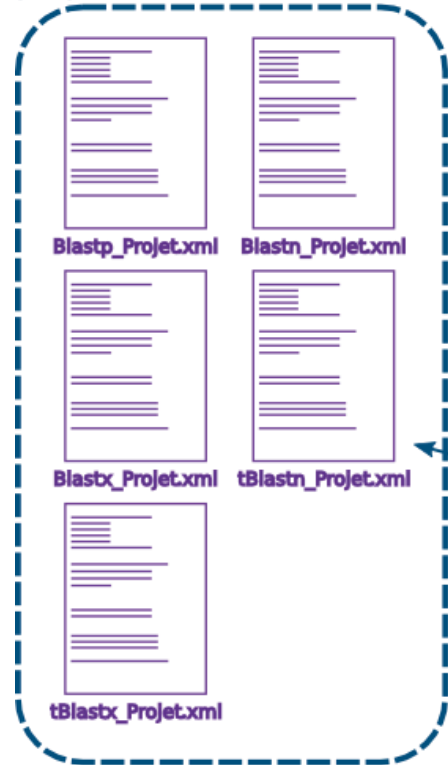


Restricted access – How?

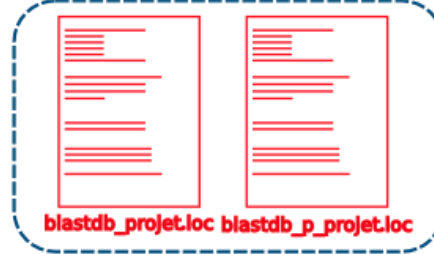


Restricted access – How?

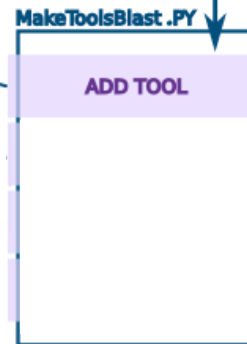
galaxy-dist/tools/blast/



galaxy-dist/tool-data/



Name = Projet

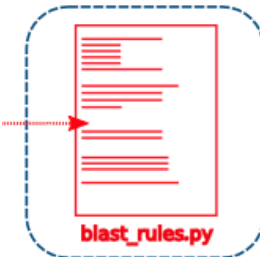


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galaxy-dist/lib/galaxy/tools/filters/

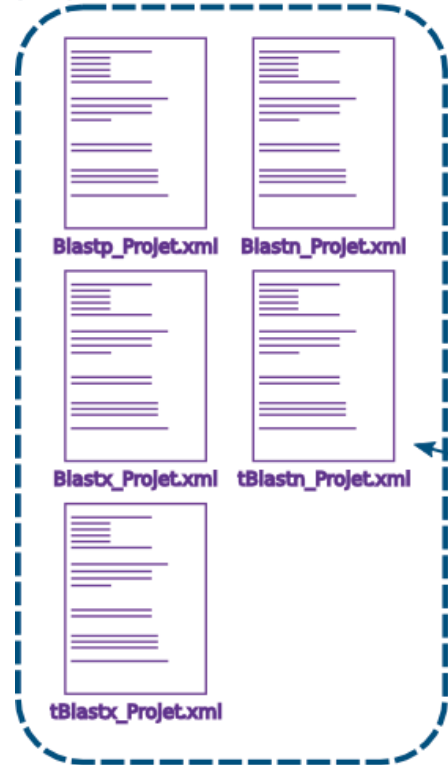


galaxy-dist/lib/galaxy/jobs/rules

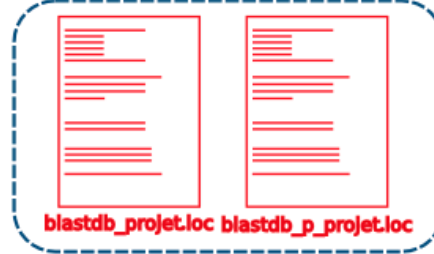


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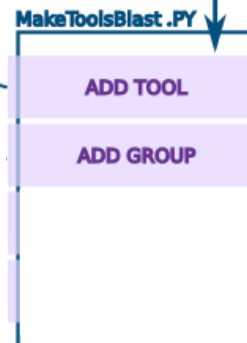
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galaxy-dist/tool-data/

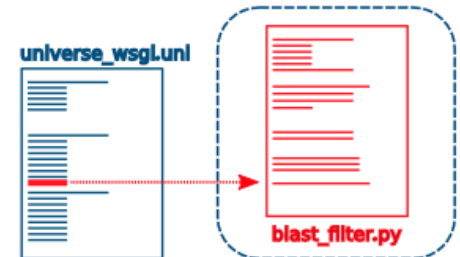


Name = Projet

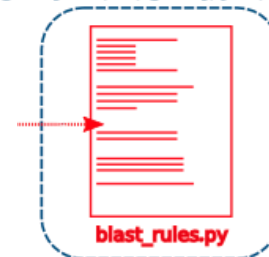


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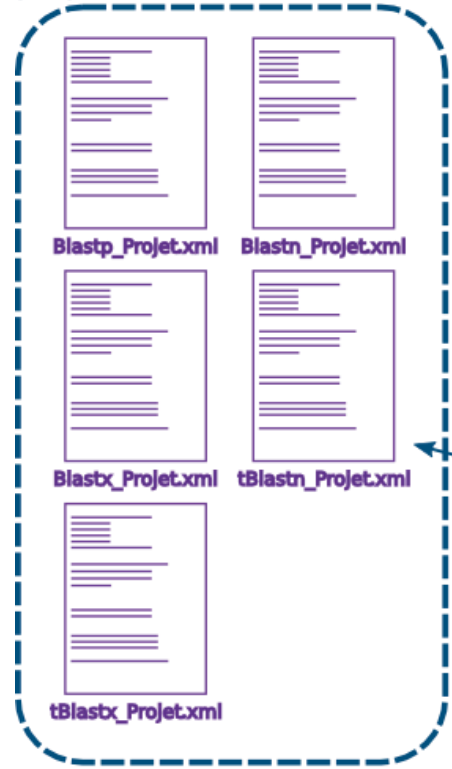


galaxy-dist/lib/galaxy/jobs/rules

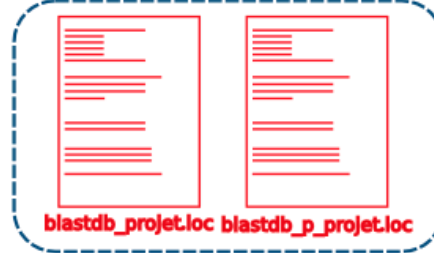


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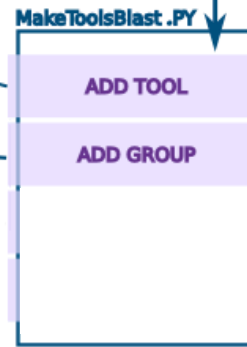
galaxy-dist/tools/blast/



galaxy-dist/tool-data/

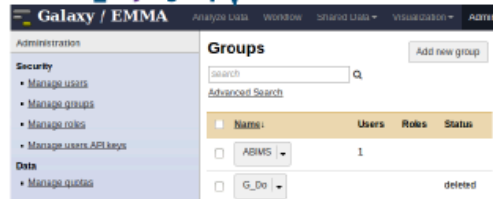


ProjectName
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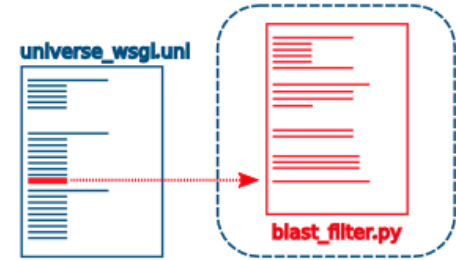


API
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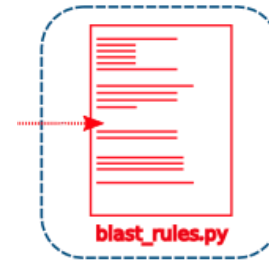
Create G_Projet group



galaxy-dist/lib/galaxy/tools/filters/

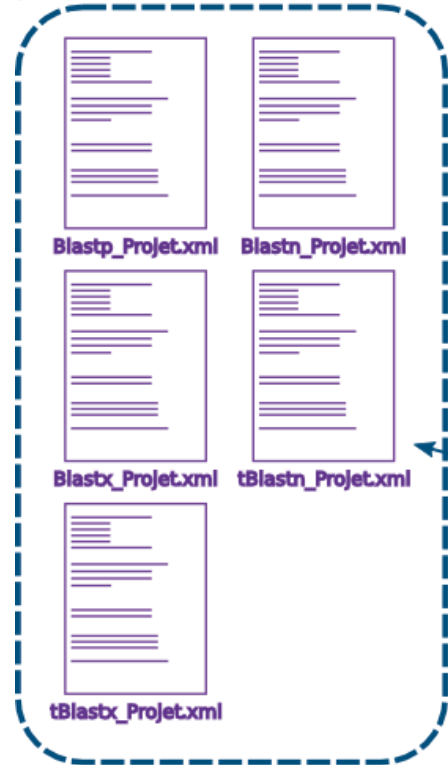


galaxy-dist/lib/galaxy/jobs/rules

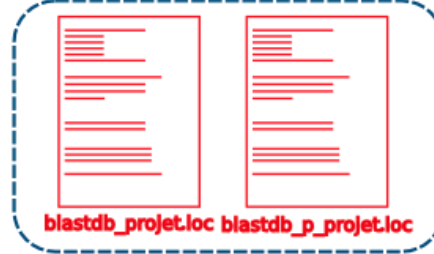


Restricted access – How?

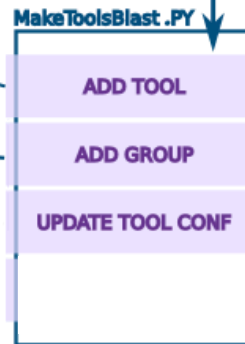
galaxy-dist/tools/blast/



galaxy-dist/tool-data/

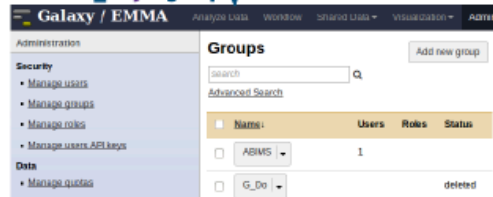


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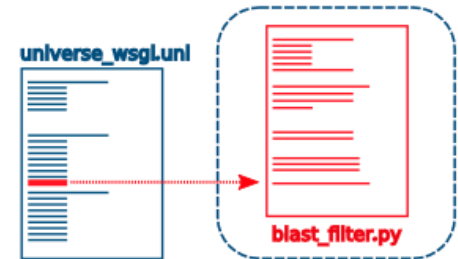


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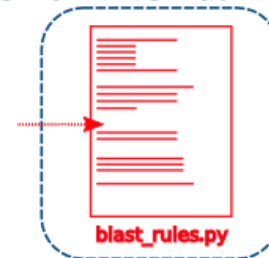
Create G_Projet group



galaxy-dist/lib/galaxy/tools/filters/

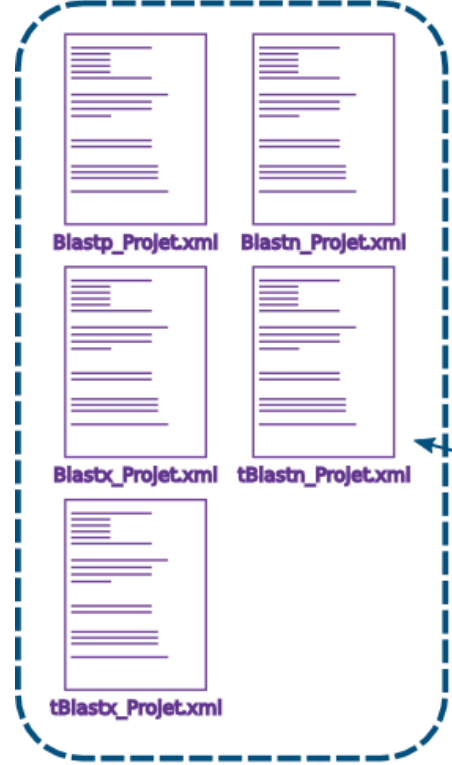


galaxy-dist/lib/galaxy/jobs/rules



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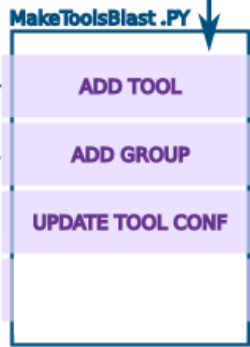
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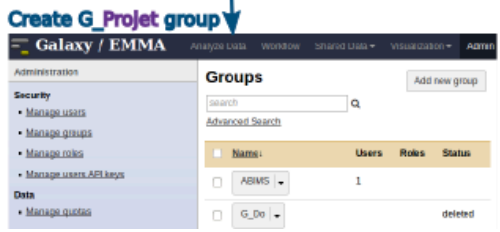
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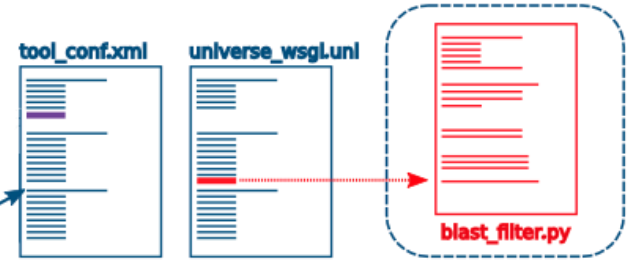
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ApiKey



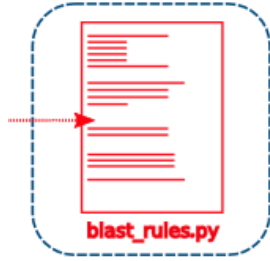
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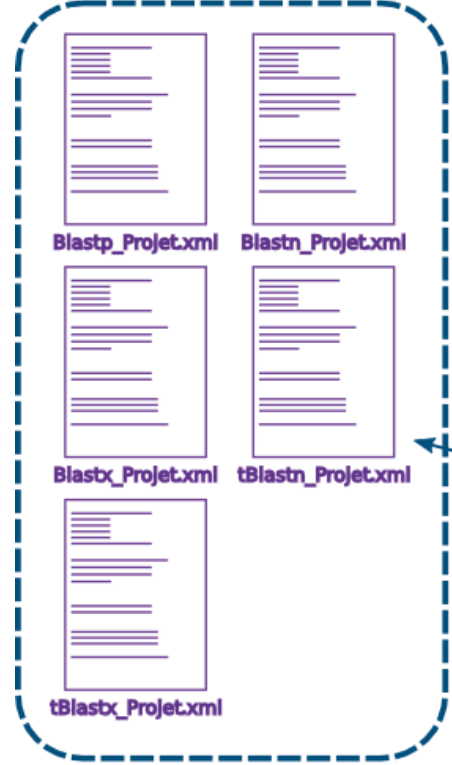


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Restricted access – How?

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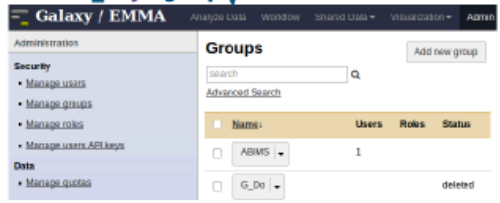


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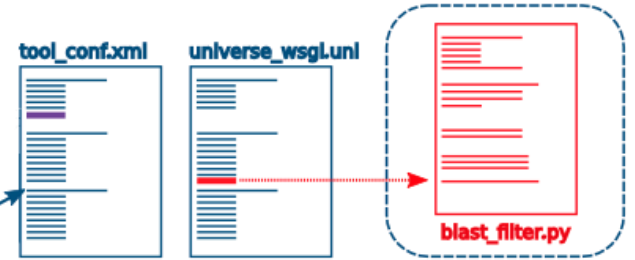
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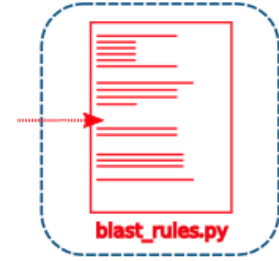


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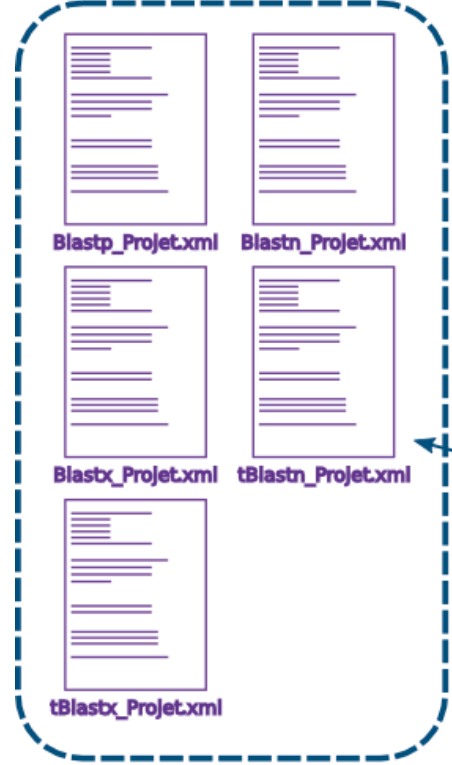


galaxy-dist/lib/galaxy/jobs/rules



Restricted access – How?

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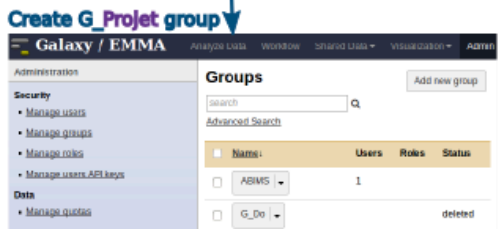
galaxy-dist/tool-data/



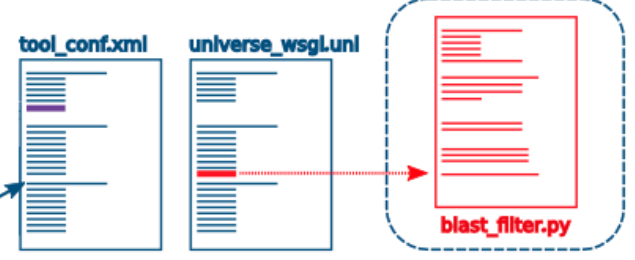
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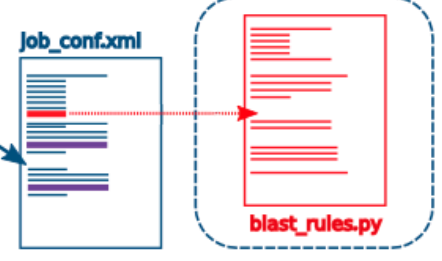
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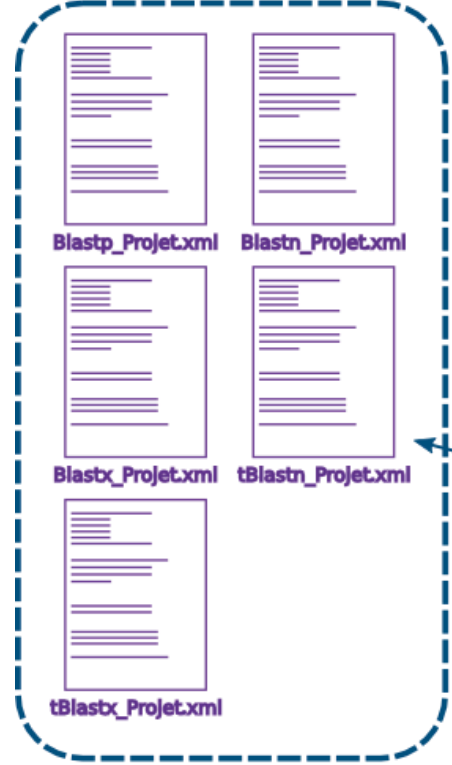


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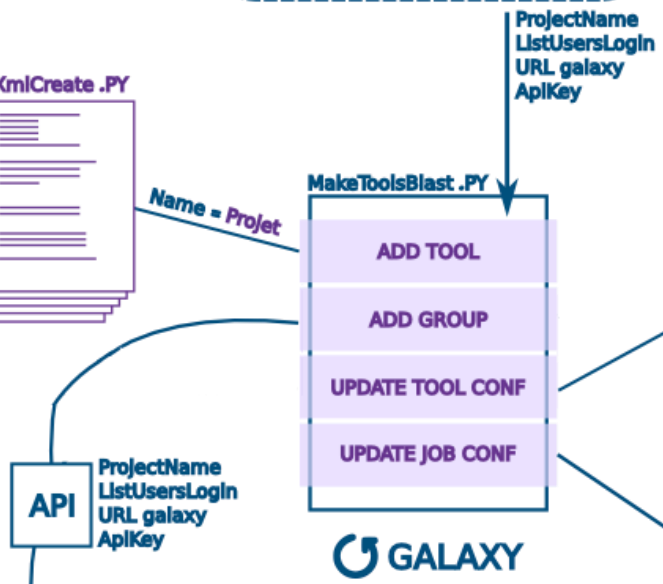


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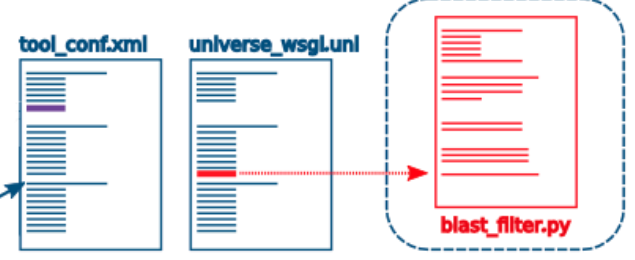
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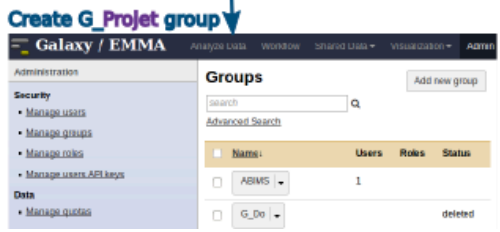
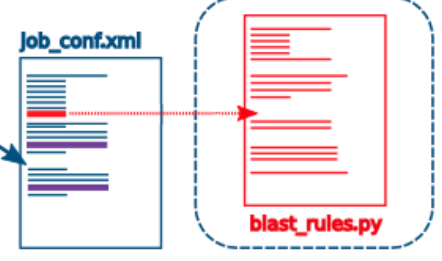
galaxy-dist/tool-data/



galaxy-dist/lib/galaxy/tools/filters/



galaxy-dist/lib/galaxy/jobs/rules



Multi-bank querying – How?

```
<inputs>  
  <param label="BLAST database" multiple="true" name="database" type="select">  
</inputs>
```

Blastn_projet2014 (version 0.0.17)

Nucleotide query sequence(s):
393: NucSeq

Subject database/sequences:
BLAST Database

Type of DATABASE:
Public databases

Nucleotide Public BLAST database:
x genbank Bacterial x genbank Plant

Outputs – How?

Tools

search tools

BlastTool

WrapMeApp

BLAST TOOLS

BLAST

[tBlastx_projet2014](#)

[Blastn_projet2014](#)

[Blastx_projet2014](#)

[Blastp_projet2014](#)

[tBlastn_projet2014](#)

[VisuBlast](#)

DATA

Get Data

[Upload File](#) from your computer

[UCSC Main](#) table browser

[UCSC Test](#) table browser

[UCSC Archaea](#) table browser

[EBI SRA](#) ENA SRA

[Get Microbial Data](#)

[BioMart](#) Central server

[BioMart](#) Test server

[CBI Rice Mart](#) rice mart

[GrameneMart](#) Central server

[modENCODE fly](#) server

[modENCODE worm](#) server

[WormBase](#) server

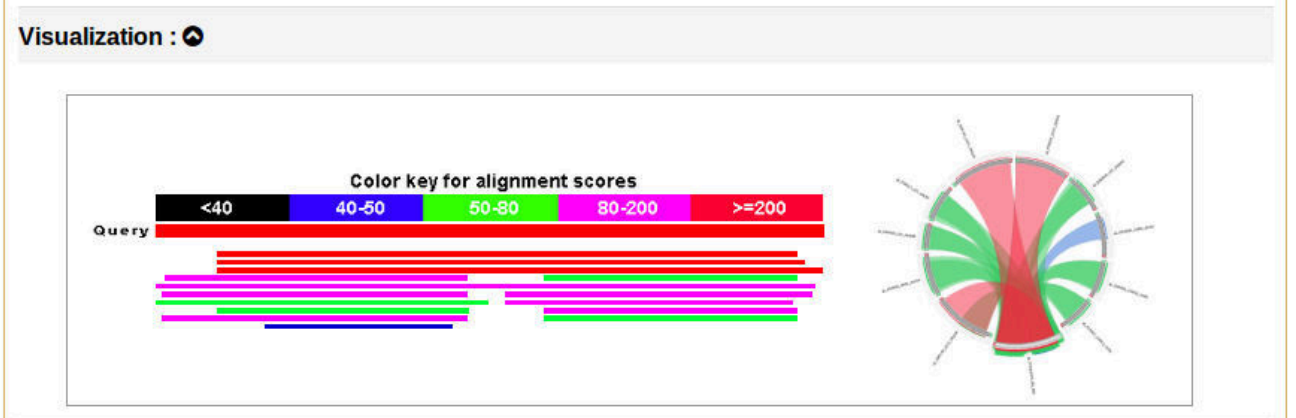
[Wormbase](#) test server

[EuPathDB](#) server

[HbVar](#) Human Hemoglobin Variants and Thalassemias

[GenomeSpace](#) import from file

ABIMS : BLASTP 2.2.27+
 Database: uniprot_swissprot (545,536 sequences; 194,023,197 total letters)
 Query= ProtLectin
 Length=267



Tools :

Format XML

160 Score

10 CheckBest

Things FindWord

Descriptions :

Selected : 0	Descriptions	Scores	Evalues	Accessions
<input type="checkbox"/>	Mannose-specific lectin 3 [crocus vernus pe=1 sv=3]	221	1e-69	P86626
<input type="checkbox"/>	Mannose-specific lectin 1 [crocus vernus]	220	6e-69	Q9FVA1
<input type="checkbox"/>	Mannose-specific lectin 2 [crocus vernus]	212	6e-66	Q9FV99
<input type="checkbox"/>	Mannose-specific lectin [galanthus nivalis pe=1 sv=1]	89.4	2e-20	P30617
<input type="checkbox"/>	Mannose-specific lectin [allium sativum]	87.0	3e-19	P83886
<input type="checkbox"/>	Curculin-1 [curculigo latifolia]	85.5	5e-19	P19667

History

01/07/14

180.4 MB

901: OutSwiss

898:

BlastpLectinSwiss

897: OutUniprot

896: ProtLectin

895: OutUniprot

894: OutUniprot

893: OutUniprot

892: OutUniprot

495.1 KB

format: **html**, database: ?

```
[/w/galaxy/galaxy4emma/galaxy-dist, 'w/galaxy/galaxy4emma/galaxy-dist/database/tmp/tploA_9c', 'w/galaxy/galaxy4emma/galaxy-dist/tool-data', 'w/galaxy/galaxy4emma/galaxy-dist/database/tmp/tploA_9c'] dataset_989 db = [uniprot]
```

HTML file

891: OutUniprot

890: OutUniprot

889: OutUniprot

888: OutUniprot

887: OutUniprot

SO!

- Restricted access to resources
- Multi-bank querying



IN PROGRESS

2 months

- Different output formats
- blastdbcmd for sequences
- Enhanced biological outputs
- Decrease the maintenance time → automate



OUR NERVE YOU

