

Gestion de version pour VMS avec Mercurial et Heptapod

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<https://octobus.net>

Rendez-vous autour de VMS – 12 Novembre 2020

VMSgenerations





- société française
- développement
 - Gestionnaire de versions Mercurial (cœur et extensions)
 - éditeur de la forge Heptapod
- prestations de conseil et accompagnement
- clients français ou internationaux



Gérer l'évolution des sources d'un programme ou tous types de fichiers.

- Enregistrer étapes de l'historique (commit):
 - Contenu des fichiers et répertoires
 - Auteur et date
 - Explications
 - Identifiant final



Gestion de version

Fonctionnalités primordiales

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- Enregistrer étapes de l'historique (commit):
 - Contenu des fichiers et répertoires
 - Auteur et date
 - Explications
 - Identifiant final
- Parcourir l'historique (log) et afficher changements (diff)
- Travail en parallèle → divergence
- Échanger les fichiers entre différentes machines



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- Échanger les fichiers entre différentes machines
- Réconciliation des modifications faites en parallèle (merge)



Gestion de version

Catégorisation et process

- branches: maintenance, courante, expérimentales. . .
- relecture et validation
- versions prêtes à installation/distribution (tags)



Gestion de version

Une chronologie succincte

- Première vague, fichier par fichier: SCSS (1972), RCS (1982)
- Seconde vague, serveur central: CVS (1986), Perforce (1995), Subversion (2000)
- Troisième vague, les décentralisés:
 - BitKeeper (2000), Darcs, Monotone (2003), Bazaar (2005)
 - Git, le plus connu (2005)
 - Mercurial (2005)



Mercurial

Un gestionnaire de version décentralisé

- développé activement depuis 2005
- disponible sur la plupart des systèmes
 - Windows, MacOS X, Linux. . .
 - OpenVMS (portage J.-F. Piéronne, SysGroup)
- Grande variété d'utilisateurs. Exemples:
 - petites équipes, voire individus
 - Nokia
 - Mozilla (Firefox)
 - Google



- très grandes bases de code (millions de fichiers, de commits)
- adapté aux équipes à l'échelle mondiale (distribution géographique, réplicats)
- options pour très gros fichiers binaires
- téléchargement partiels avec contrôle d'accès



Heptapod

Une forge logicielle complète

- serveur de référence Mercurial (et Git)
- outils supplémentaires
 - gestion de projet
 - revue de code
 - livrables
 - intégration continue
 - optionnels ou désactivables (adoption progressive)



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- installation sur site, ou service commercial en ligne
<https://about.heptapod.host>



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- base utilisateurs prévue pour les grands SI :
LDAP/ActiveDirectory, SAML, OAuth2...
- rôles utilisateurs par projet et groupes



- CI : Continuous Integration
 - Vérification syntaxique / stylistique
 - Vérification compilation plate-forme cible
 - Tests automatisés



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- CD : Continuous Delivery and Deployment
 - Delivery : production de livrables
 - Deployment : recette, préproduction. . .



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 - Deployment : recette, préproduction. . .
- Bénéfices
 - Robustesse et qualité
 - Gains de temps considérables



- architecture avec orchestrateur et agents (« runners »)
- expérience runner OpenVMS (stagiaire SysGroup/Octobus été 2020)



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- expérience runner OpenVMS (stagiaire SysGroup/Octobus été 2020)
- recherche partenariat pour conclure



- architecture avec orchestrateur et agents (« runners »)
- expérience runner OpenVMS (stagiaire SysGroup/Octobus été 2020)
- recherche partenariat pour conclure
- ordre de grandeur : une semaine pour prototype complet.



- captures d'écran de projets publics



- captures d'écran de projets publics
- forge publique de VMSSgenerations. Annonce :
<http://www.vmsgenerations.fr/vms-et-open-source/laforge-gitlab>



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<http://www.vmsgenerations.fr/vms-et-open-source/laforge-gitlab>
- prises sur le serveur Heptapod dédié à l'Open Source :
<https://foss.heptapod.net>
service proposé gracieusement avec notre partenaire hébergement



clever cloud



Heptapod, navigation

Vue initiale d'un projet

The screenshot shows the initial view of a project on the Heptapod platform. The interface includes a top navigation bar with 'Projects', 'Groups', and 'More' menus, a search bar, and a sidebar on the left with navigation links like 'Project overview', 'Details', 'Activity', 'Releases', 'Repository', 'Issues', 'Merge Requests', 'CI / CD', 'Operations', 'Packages & Registries', 'Analytics', 'Wiki', 'Snippets', and a 'Collapse sidebar' button.

The main content area displays the project details for 'pypy' (Project ID: 76). It shows statistics: 67,770 Commits, 359 Branches, 87 Tags, 1.8 GB Files, and 1.8 GB Storage. A description states: 'PyPy is a very fast and compliant implementation of the Python language.'

Below the description, there is a branch selector showing 'branch/default' and 'pypy / +'. To the right are buttons for 'History', 'Find file', and 'Clone'. A recent commit is highlighted: 'Added tag release-pypy3.7-v7.3.3rc1 for changeset 6cf8fa20a7f' by Matti Picus, 11 hours ago.

At the bottom, there are buttons for 'README', 'LICENSE', 'CI/CD configuration', 'Add CHANGELOG', 'Add CONTRIBUTING', and 'Add Kubernetes cluster'. A table lists project components with their last commit and update dates.

Name	Last commit	Last update
_pytest	move test summary to end on terminal, after the multiple pages of f...	3 years ago
dotviewer	Rename NOTICE - it has a specific meaning in the Apache license, an...	2 years ago
extra_tests	update test	1 week ago
include	Update includes README to mention new generated files, and the cp...	3 years ago
lib-python	Support current MacOS in this (non-upstream) kqueue test	4 weeks ago

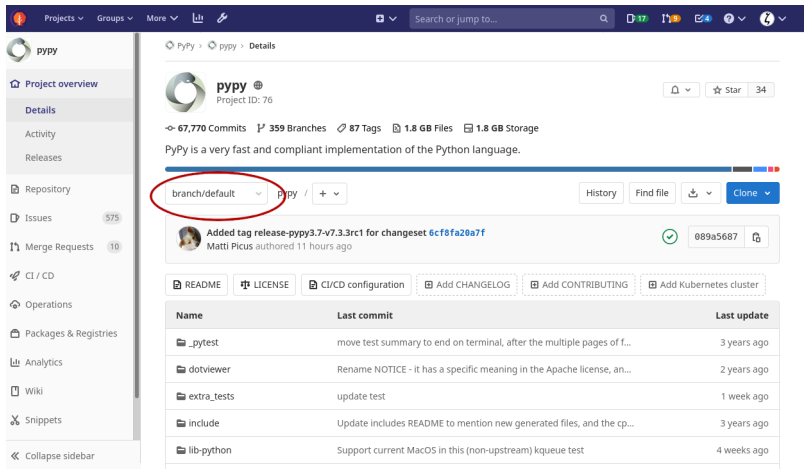


Vue initiale d'un projet



Heptapod, navigation dans les sources

Changement de branche



The screenshot shows the PyPy project page on Heptapod. The left sidebar contains navigation links: Project overview, Details, Activity, Releases, Repository, Issues (575), Merge Requests (10), CI / CD, Operations, Packages & Registries, Analytics, Wiki, Snippets, and Collapse sidebar. The main content area shows the project details for PyPy (Project ID: 76), including 67,770 Commits, 359 Branches, 87 Tags, 1.8 GB Files, and 1.8 GB Storage. A description states: "PyPy is a very fast and compliant implementation of the Python language." Below this, a branch selector shows "branch/default" selected, with a red circle highlighting it. To the right of the selector are buttons for History, Find file, and Clone. A recent commit by Matti Picus is shown, adding a tag for release-pypy3.7-v7.3.3rc1. At the bottom, there are buttons for README, LICENSE, CI/CD configuration, and adding CHANGELOG, CONTRIBUTING, and Kubernetes cluster. A table lists files and their last commit details.

Name	Last commit	Last update
 _pytest	move test summary to end on terminal, after the multiple pages of f...	3 years ago
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Heptapod, navigation dans les sources

Dernier commit de la branche

PyPy > pypy > Repository

branch/hpy pypy +

History Find file Clone

fix extra_tests - apparently pytest_addoption can only be in toplevel conftest.py ba7496c0

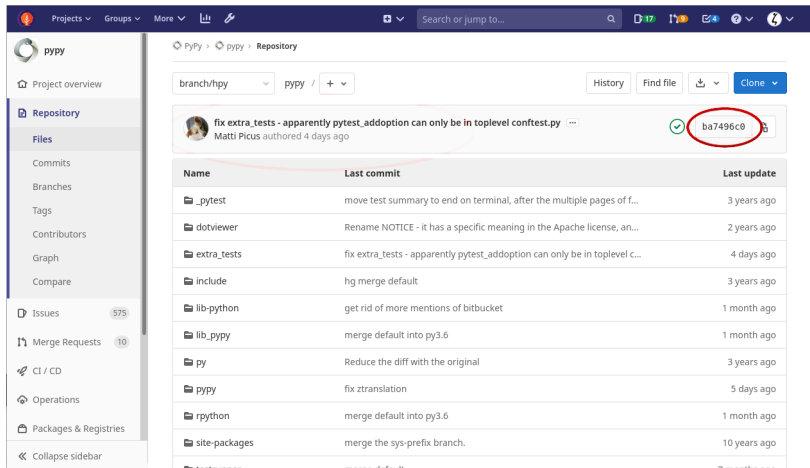
Matti Picus authored 4 days ago

Name	Last commit	Last update
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include	hg merge default	3 years ago
lib-python	get rid of more mentions of bitbucket	1 month ago
lib_pypy	merge default into py3.6	1 month ago
py	Reduce the diff with the original	3 years ago
pypy	fix ztranslation	5 days ago
rpython	merge default into py3.6	1 month ago
site-packages	merge the sys-prefix branch.	10 years ago



Heptapod, navigation dans les sources

Dernier commit de la branche



The screenshot displays the Heptapod web interface for the 'pypy' repository. The left sidebar shows navigation options: Project overview, Repository (selected), Files, Commits, Branches, Tags, Contributors, Graph, Compare, Issues (575), Merge Requests (10), CI / CD, Operations, Packages & Registries, and Collapse sidebar. The main content area shows the repository 'pypy' with a search bar and buttons for History, Find file, Download, and Clone. A commit titled 'fix extra_tests - apparently pytest_addoption can only be in toplevel conftest.py' by Matti Picus is highlighted. The commit hash 'ba7496c0' is circled in red. Below the commit list, a table shows the last commit for various files.

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Name	Last commit	Last update
extra_tests	fix extra_tests - apparently pytest_addoption can only be in toplevel conftest.py	4 days ago
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Heptapod, navigation dans les sources

Dernier changement d'un fichier ou répertoire

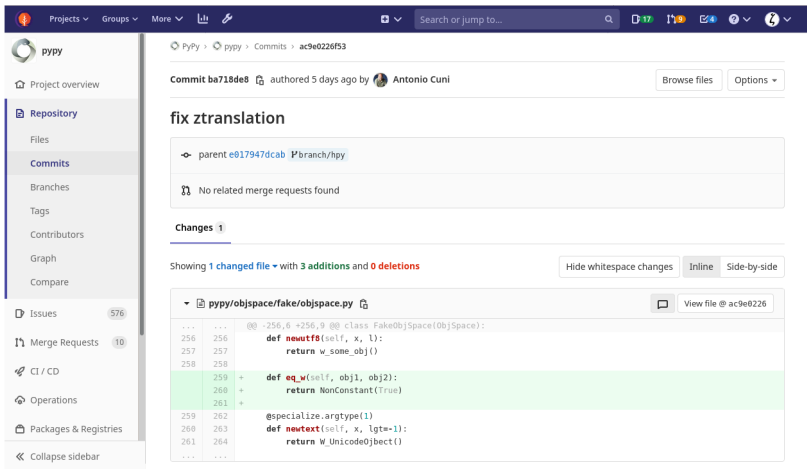
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Heptapod

Navigation projet : commit



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```
...      @@ -256,6 +256,9 @@ class FakeObjSpace(ObjSpace):
256      256      def newutf8(self, x, l):
257      257      return w_some_obj()
258      258
259      + def eq_w(self, obj1, obj2):
260      + return NonConstant(True)
261      +
259      262      @specialize.argtype(1)
260      263      def newtext(self, x, lgt=-1):
261      264      return W_UnicodeObject()
...      ...
```



Heptapod

Navigation projet : branches

The screenshot displays the 'Branches' page for the 'pypy' repository on Heptapod. The interface is divided into a sidebar and a main content area. The sidebar on the left contains navigation links: 'Project overview', 'Repository', 'Files', 'Commits', 'Branches' (highlighted), 'Tags', 'Contributors', 'Graph', 'Compare', 'Issues' (575), 'Merge Requests' (10), 'CI / CD', 'Operations', 'Packages & Registries', and 'Collapse sidebar'. The main content area has a top navigation bar with 'PyPy' > 'pypy' > 'Repository' > 'Branches'. Below this is a filter bar with 'Overview' (selected), 'Active', 'Stale', and 'All' tabs, and a 'Filter by branch name' input field. A message states: 'Protected branches can be managed in [project settings](#).' The 'Active branches' section lists several branches: 'branch/rpython3' (7/8, 736943119f7, StringIO · 5 hours ago), 'branch/default' (4ca54634af5, Added tag release-pypy3.7-v7.3.3rc1 for changeset 6cf8fa20a7f · 13 hours ago, marked 'default' and 'protected'), 'branch/release-pypy3.7-v7.x' (6cf8fa20a7f, disable _hpy_universal for this release · 2 days ago), 'branch/release-pypy3.6-v7.x' (fab92f174c7, disable _hpy_universal for this release · 2 days ago), and 'branch/py3.7' (fee8f28c454, fix broken merge 2f61e71cf5b (some code that w...)). Each branch entry includes a commit hash, a description, a merge request button, a 'Compare' button, and a download icon. A 'Show more active branches' link is at the bottom of the active branches list. The 'Stale branches' section shows 'branch/initialize_lock_timeout_on_windows' (merged, 32410). The bottom of the page features a purple logo and navigation icons.

Heptapod

Navigation projet : branches

PyPy > pypy > Repository > Branches

Overview Active Stale All

Filter by branch name

Protected branches can be managed in [project settings](#).

Active branches

branch/rpython3	7/8	✓	Merge request	Compare	Download
↳ 736943119f7 · StringIO · 5 hours ago					
branch/default		default protected ✓			Download
↳ 4ca54634af5 · Added tag release-pypy3.7-v7.3.3rc1 for changeset 6cf8fa20a7f · 13 hours ago					
branch/release-pypy3.7-v7.x	3/999+	✓	Merge request	Compare	Download
↳ 6cf8fa20a7f · disable _hpy_universal for this release · 2 days ago					
branch/release-pypy3.6-v7.x	3/999+	✓	Merge request	Compare	Download
↳ fab92f174c7 · disable _hpy_universal for this release · 2 days ago					
branch/py3.7	3/999+	protected ✓	Merge request	Compare	Download
↳ fee8f28c454 · no broken merge 2f61e71cf5b (some code that w...					

[Show more active branches](#)

Stale branches

branch/initialize_lock_timeout_on_windows	324/0	merged ✓	Merge request	Compare	Download
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Heptapod, soumission et revue

Les Merge Requests

The screenshot shows a web interface for a Merge Request (MR) on Heptapod. The left sidebar contains navigation links: Project overview, Repository, Issues (576), Merge Requests (10), CI / CD, Operations, Packages & Registries, Analytics, Wiki, Snippets, Members, and Settings. The main content area displays the MR details for 'introduce a @never_allocate class decorator', opened 1 month ago by Antonio Cuni. It includes an 'Overview' tab, a description of the decorator, and a 'Request to merge' section showing the source branch 'branch/rpython-neve...' is 143 commits behind the target 'branch/default'. A status bar indicates 'Pipeline #10969 passed for aba70973 on branch/rpython-neve...'. At the bottom, there are buttons for 'Merge', 'Delete source branch', and 'Squash commits'. The right sidebar shows 'To Do' items: Assignees (None), Milestone (None), Time tracking (No estimate), Labels (None), Lock merge request (Unlocked), 3 participants, and Notifications. A reference link 'Reference: pypy/pypy1764' is also present.

faisons défiler la page. . .



Heptapod, soumission et revue

Les Merge Requests

The screenshot displays the Heptapod web interface for a Merge Request in the 'pypy' project. The left sidebar contains navigation links: Project overview, Repository, Issues (576), Merge Requests (10), CI / CD, Operations, Packages & Registries, Analytics, Wiki, Snippets, Members, and Settings. The main content area is titled 'Overview' and shows the Merge Request details. It includes an 'Approve' button, a 'Merge' button, and checkboxes for 'Delete source branch' and 'Squash commits'. A summary states: '2 commits and 1 merge commit will be added to branch/default. [Modify merge commit](#)'. Below this, it says: 'You can merge this merge request manually using the [command line](#)'. There are three comments from users: Ronan Lamy (@rlamy), Antonio Cuni (@antocuni), and Ronan Lamy (@rlamy) again. The right sidebar contains a 'To Do' section with 'Add a To Do' button, and sections for 'Assignees' (0), 'Milestone' (None), 'Time tracking' (No estimate or time spent), 'Labels' (None), 'Lock merge request' (Unlocked), '3 participants' (with avatars), 'Notifications' (toggle), and 'Reference: pypy/pypy/764'.



Heptapod, soumission et revue

Les Merge Requests

Projects Groups More Search or jump to...

pypy

- Project overview
- Repository
- Issues 576
- Merge Requests 10**
- CI / CD
- Operations
- Packages & Registries
- Analytics
- Wiki
- Snippets
- Members
- Settings
- Collapse sidebar

PyPy Merge Requests 1764

Open Opened 1 month ago by Antonio Cuni Edit Close merge request

introduce a @never_allocate class decorator

Overview 6 Commits 2 Pipeline 2 **Changes 4**

Compare branch/default and latest version 4 files +63 -3

rpython/memory/gctransform/transform.py +14 -2

Show unchanged lines

```
19 19 from rpython.translator.simplify import cleanup_graph
20 20 from rpython.memory.gctransform.log import log
21 21
22 22 + class GCTransformError(Exception):
23 23 +     pass
24 24
25 25 class GCHighLevelOp(object):
26 26     def __init__(self, gct, op, index, llops):
27 27
28 28     Show unchanged lines
29 29
30 30     inserted_empty_startblock = True
31 31     is_borrowed = self.compute_borrowed_vars(graph)
32 32
33 33     for block in graph.iterblocks():
34 34         self.transform_block(block, is_borrowed)
35 35
36 36     try:
37 37         for block in graph.iterblocks():
```

To Do Add a To Do

0 Assignees None - assign yourself Edit

Milestone None Edit

Time tracking No estimate or time spent

Labels None Edit

Lock merge request Unlocked Edit

3 participants

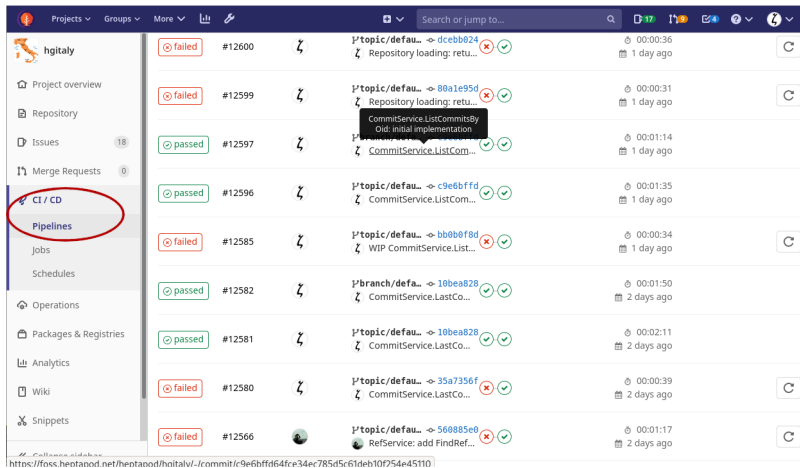
Notifications

Reference: pypy/pypy1764



Heptapod CI/CD

Pipelines



The screenshot displays the Heptapod CI/CD interface. On the left, a sidebar menu shows the navigation structure: 'Project overview', 'Repository', 'Issues' (18), 'Merge Requests' (0), 'CI / CD' (highlighted with a red circle), 'Jobs', 'Schedules', 'Operations', 'Packages & Registries', 'Analytics', 'Wiki', and 'Snippets'. The main area shows a list of pipeline jobs. Each job entry includes a status icon (failed in red, passed in green), a job ID, a branch/topic, a commit hash, a description of the task, and a duration. The jobs are as follows:

Status	Job ID	Branch/Topic	Commit Hash	Task Description	Duration	Time Ago
failed	#12600	P'topic/default	dceb824	Repository loading: retu...	00:00:36	1 day ago
failed	#12599	P'topic/default	80a1e95d	Repository loading: retu...	00:00:31	1 day ago
passed	#12597	P'topic/default	CommitService.ListCommitsBy Old: initial implementation	CommitService.ListCom...	00:01:14	1 day ago
passed	#12596	P'topic/default	c9e6bffd	CommitService.ListCom...	00:01:35	1 day ago
failed	#12585	P'topic/default	bb0b0f8d	WIP CommitService.List...	00:00:34	1 day ago
passed	#12582	P'branch/default	10bea828	CommitService.LastCo...	00:01:50	2 days ago
passed	#12581	P'topic/default	10bea828	CommitService.LastCo...	00:02:11	2 days ago
failed	#12580	P'topic/default	35a7356f	CommitService.LastCo...	00:00:39	2 days ago
failed	#12566	P'topic/default	560885e0	RefService: add FindRef...	00:01:17	2 days ago

At the bottom of the screenshot, the URL is visible: <https://foss.heptapod.net/heptapod/hoitalv/-/commit/c9e6bffd64fce34ec785d5c61deb10f754e45110>

Un ensemble de tâches (jobs)...



Heptapod CI/CD

Pipelines

... groupées en étapes successives (stages)

The screenshot displays the Heptapod web interface for a repository named 'hgitaly'. The left sidebar contains navigation links: Project overview, Repository, Issues (18), Merge Requests (0), CI / CD (selected), Pipelines, Jobs, Schedules, Operations, Packages & Registries, Analytics, Wiki, and Snippets. The main content area shows a commit '9ca94ed8' with a message about repository existence. Below this, a summary indicates 4 jobs for 'topic/default/repo-not-found' and 1 related merge request. The 'Pipeline' section shows a DAG view with two stages: 'Main' and 'Compat'. The 'Main' stage contains a job 'tests-current'. The 'Compat' stage contains three jobs: 'check-sdist', 'tests-hg-default', and 'tests-hg-stable'. All jobs are marked with a green checkmark, indicating successful completion.

Kind on hand any more, which would be more reassuring.

We could have a better separation in concerns, as the subsequent change in `RepositoryExists()` indicates, but that's not a blocker for the imminent release.

4 jobs for topic/default/repo-not-found in 1 minute and 31 seconds (queued for 1 second)

9ca94ed8

1 related merge request: [!11 Repository loading: returning proper error if not found](#)

Pipeline DAG Jobs 4 Tests 0

Main Compat

tests-current

check-sdist

tests-hg-default

tests-hg-stable



- outil simple fourni



- outil simple fourni
 - tâches : Issues
 - catégorisation : Labels configurables (bug, feature...)
 - objectifs : Milestones
 - liens croisés: commits, Merge Requests



- outil simple fourni
 - tâches : Issues
 - catégorisation : Labels configurables (bug, feature...)
 - objectifs : Milestones
 - liens croisés: commits, Merge Requests
- possibilité de branchement à des applications tierces: Jira, Redmine, Pivotal Tracker...



Heptapod, gestion de projet

Issues, Labels, Milestones

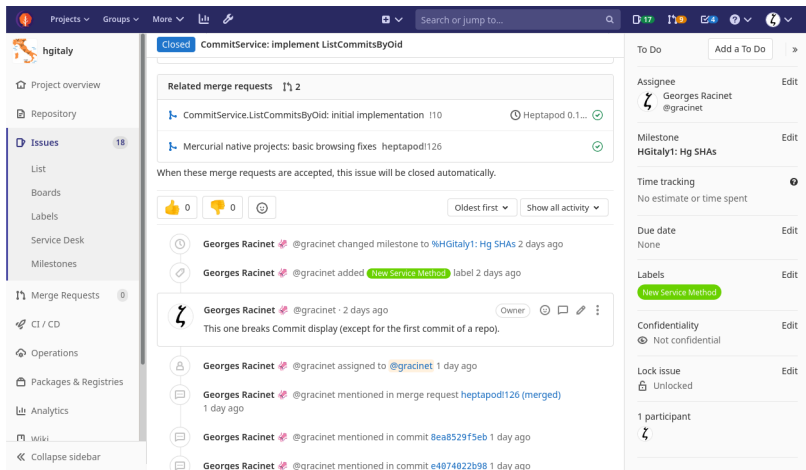
The screenshot displays the Heptapod web interface for a project named 'hgitaly'. The left sidebar contains navigation links: Project overview, Repository, Issues (18), List, Boards, Labels, Service Desk, Milestones, Merge Requests (0), CI / CD, Operations, Packages & Registries, Analytics, and Wiki. The main content area shows an issue titled 'CommitService: implement ListCommitsByOid' with a status of 'Closed', opened 2 days ago by Georges Racinet. The issue description explains the need for a service to lookup commits by ID (SHA) prefix and mentions the Rust persistent nodemap. Below the description is a text box for uploading designs, a section for related merge requests (2), and a note about automatic closure upon acceptance. The right sidebar contains metadata: To Do, Assignee (Georges Racinet), Milestone (HGitaly1: Hg SHAs), Time tracking (No estimate or time spent), Due date (None), Labels (New Service Method), Confidentiality (Not confidential), Lock issue (Unlocked), and 1 participant.

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Heptapod, gestion de projet

Gestionnaire de tâches inclus



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- Merci de votre attention
- Pour plus d'informations contact@octobus.net
- À vous pour les questions.

