

HOW TO SETUP YOUR OWN RUNBOT

SEINLET Nicolas, TECHNICAL CONSULTANT

SUMMARY

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Conclusion

The screenshot displays the 'odoo runbot' interface for the repository 'github.com/odoo/odoo'. It shows a list of pull requests (PRs) with the following details:

| Branch | PR Title | Author | Commit Hash | Runbot | Age | Time |
|--------------------------------------|-------------------------------------|---------------------------------|---------------------|------------------|---------|----------|
| ★ 7.0 2d Branch or pull ▶▶ | [FIX] web: With safari, UnicodeD... | Goffin Simon (→ Martin Trigaux) | 69479-7-0-c435b8 | runbot6.odoo.com | age 2d | time 5m |
| ★ 8.0 5h Branch or pull ▶▶ | [FIX] mail: chatter not shown wh... | Nicolas Lempereur | 69878-8-0-187ad0 | runbot7.odoo.com | age 5h | time 21m |
| ★ master 12d Branch or pull ▶▶ | [FIX] auth_oauth: reinstated fac... | David Monjoie | 66800-master-4bef17 | runbot6.odoo.com | age 12d | time 26m |
| ★ saas-3 3d Branch or pull ▶▶ | [MERGE] forward port of branch S... | Denis Ledoux | 69193-saas-3-ffc40b | runbot7.odoo.com | age 3d | time 8m |

Introduction

What, Why, When, Who?

What ?

- Runbot is a continuous integration server
- Runbot is an Odoo module
- Runbot is a communication tool between functional and technical guys
- Live preview with 2 databases (base, all)
- Provide build status to GitHub

Why ?

- Automate test phase
- Let test instances leaving
- Ease communication between technical and functional guys
- Easy to use, even for non-technical guys
- Do not replace a Q&A on customer side
- Other CI softwares exists and may be already used by technical team
- Designed for Odoo by Odoo
- Integrated with Git and GitHub

Who ?

Any member, functional or technical, member of a company which :

- Deploy Odoo
- Deploy custom module
- Deploy custom theme

And also :

- Developer who wants to test a new module
- Reviewer to check the commit
- Functional to check a use case
- Anybody to test a new app

When ?

- Since the very beginning of the process
- Before every merge
- For every functional test
- For a new feature test

Deploy a runbot

In four steps

Deploy PostgreSQL



As runbot is an Odoo module, we need PostgreSQL

As we'll have many instances of odoo running on the server, we must adapt the PostgreSQL configuration, # of connections, total allocated memory, user authentication, fsync=False,...

Deploy Odoo



- Install python libraries
- Install Odoo 8 from the github repo
- Install runbot from the odoo-extra github repo
- Install any runbot custom module

- Don't forget the dbfilter parameter

Add ssh keys for authentication



Your runbot will need read access to all your repositories, as well as read access to the odoo repository

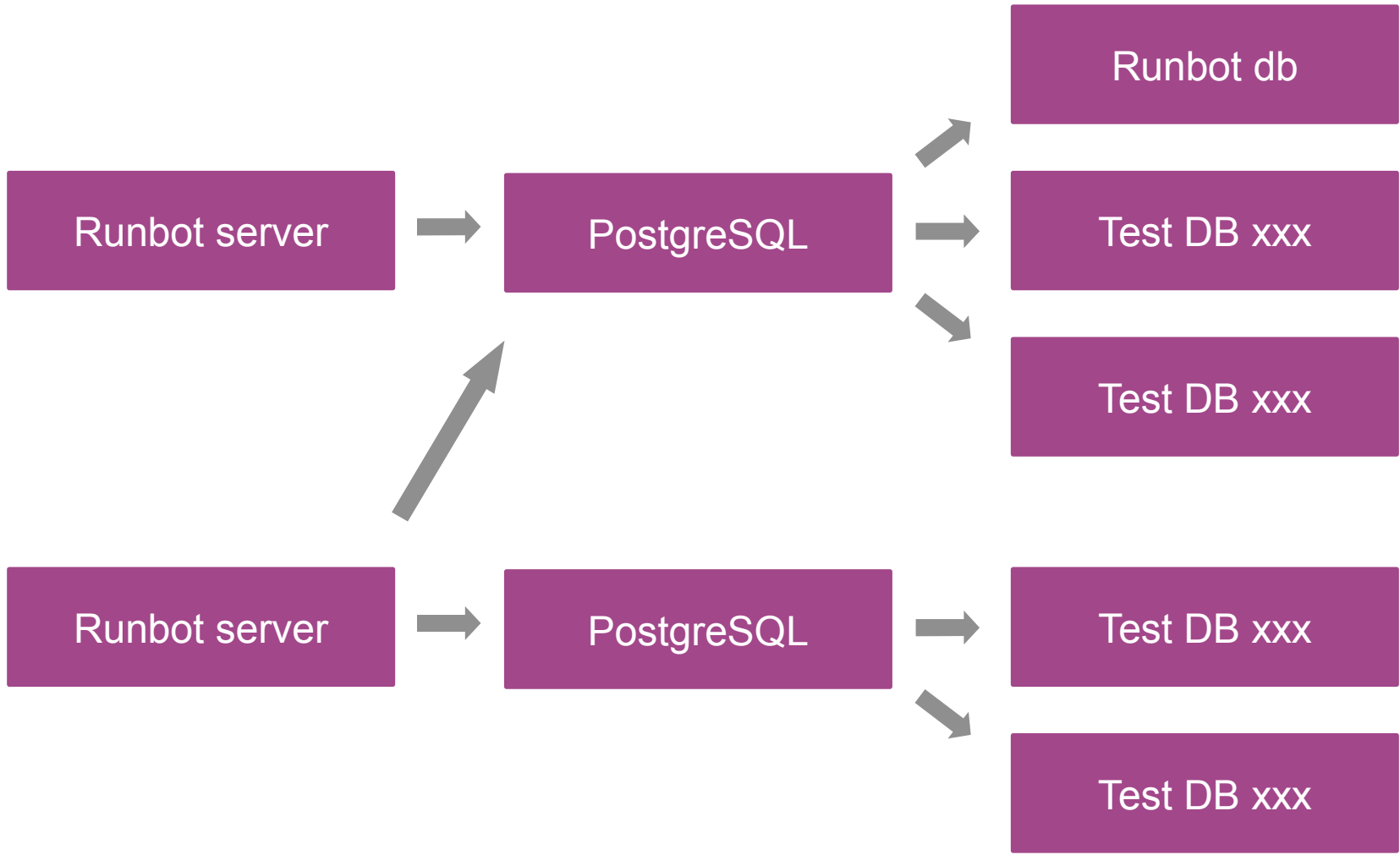
- Generate an ssh key for the linux user running runbot
- Add this key to the github, bitbucket, ... user
- Give read access for this user to your repositories

External tools



- DNS : redirect *.runbot.mycompany.com
- NGINX : runbot is running on port 8080
- Fake SMTP server (MailCatcher, ...)
- Any external software you link to (ftp, edi, ...)

Scale up



Configure runbot

And how it works

How it's made

Server

- ✓ Repositories
- ✓ Branches

- ✓ Builds
- ✓ Jobs

Runbot

Repositories

Branches

Builds

Scheduler

- ✓ Update repositories
- ✓ Create missing branches
- ✓ Self assign builds
- ✓ Advance jobs (base, all, run)
- ✓ Update NGINX config

Global parameters

Runbot

Settings

| | |
|---|----------------------------------|
| <input type="text" value="5"/> | Total Number of Workers |
| <input type="text" value="40"/> | Maximum Number of Running Builds |
| <input type="text" value="1800"/> | Default Timeout (in seconds) |
| <input type="text" value="2000"/> | Starting Port for Running Builds |
| <input type="text" value="runbot.mycompany.com"/> | Runbot Domain |

- Parameters are shared by all instances
- Timeout vs Max CPU time
- Runbot domain vs FQDN

Add authentication

As runbot is generally behind a public IP, it's better to create groups and users

- Use groups per team, project, ...
- Add users in groups
- Manage default user profile

It's possible to use other authentication methods (nginx, ...)

Add your first repo : Odoo

- The easiest one
- Necessary for other repositories
- Find missing libraries
- Check Nginx
- Check smtp
- Check dns
- Check ssh access to GitHub
- Check PostgreSQL config
- Check system load

Add your first repo : Odoo

git@github.com:odoo/odoo

Update

Cron

Killall

Params

Auto

Nginx

Duplicate repo

Extra dependencies

Modules to Install

Github token

Limited to groups

Add your own repo : petstore

Repository

ithub.com:odoo/petstore

Params

Auto

Nginx

Duplicate repo

Extra dependencies

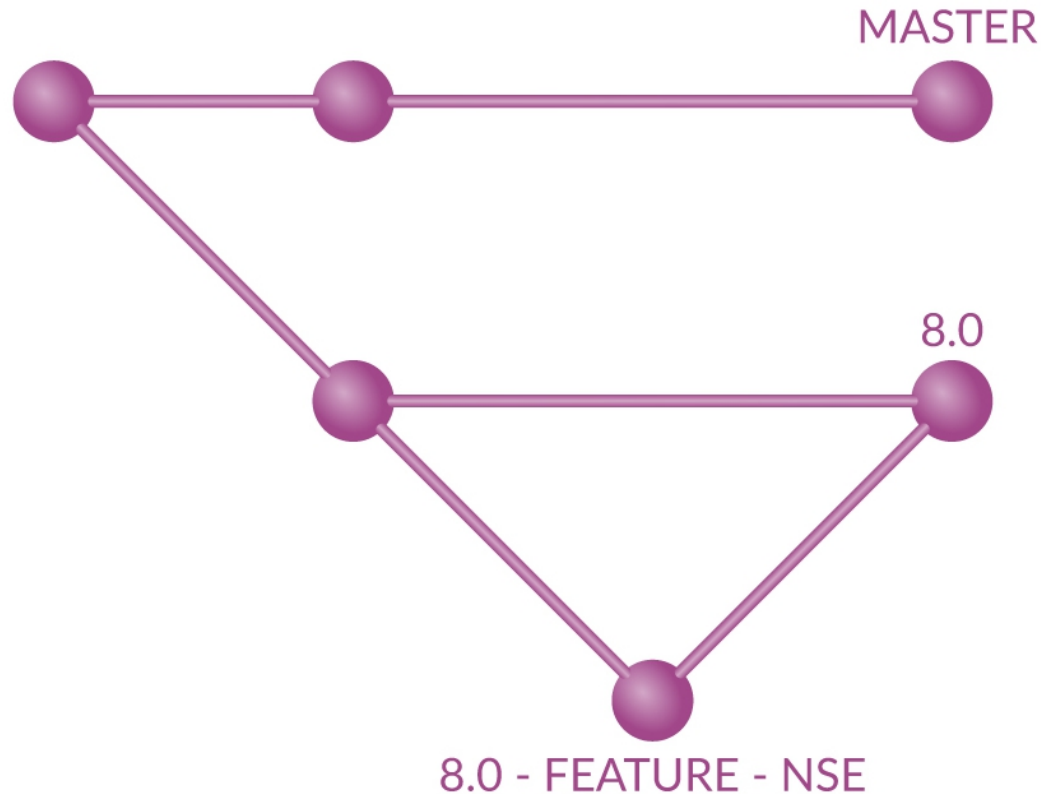
Modules to Install

Github token

Limited to groups

Use branch name matching

- 1. Same branch name
- 2. Common ancestors (git merge-base)
- 3. Name splitting on '-' character



Use sticky branches

- Always on top
- No build skipped
- Last build not killed

| Branch | | |
|-------------------------------------|---|--|
| ★ 6.1 39d Branch or pull ↻ ▶▶ | [CLEAN] remove old thunderbird f... Thibault Francois 64535-6-1-d38a5c on psrunbot.odoo.com 👍 age 39d time 5m | [CLEAN] remove old thunderbird f... Thibault Francois 64370-6-1-d38a5c on psrunbot.odoo.com |
| ★ 7.0 5d Branch or pull ↻ ▶▶ | [FIX] web: With safari, UnicodeD... Goffin Simon (→ Martin Trigaux) 66301-7-0-c435b8 on psrunbot.odoo.com 👍 age 5d time 8m | [FIX] purchase: deletion of PO I... Denis Ledoux 66267-7-0-acd61f on psrunbot.odoo.com 👍 age 5d time 9m |

| odoo | | Branches | Search |
|------------------------------|-------------------|-------------------------------------|--------------|
| Runbot | | Create or Import | 1-80 of 3775 |
| Repository | Ref Name | Sticky | Status |
| git@github.com:odoo/odoo | refs/heads/5.0 | <input type="checkbox"/> | |
| git@github.com:odoo/odoo | refs/heads/6.0 | <input type="checkbox"/> | |
| git@github.com:odoo/odoo | refs/heads/6.1 | <input type="checkbox"/> | |
| git@github.com:odoo/odoo | refs/heads/7.0 | <input checked="" type="checkbox"/> | |
| git@github.com:odoo/odoo | refs/heads/8.0 | <input checked="" type="checkbox"/> | |
| git@github.com:odoo/odoo | refs/heads/master | <input checked="" type="checkbox"/> | |
| git@github.com:odoo/petstore | refs/heads/master | <input type="checkbox"/> | |
| nit@nithub.com:odoo/odoo | refs/heads/nosbox | <input type="checkbox"/> | |

Link to GitHub


- Set GitHub token to use GitHub API
- Bi directional link

| Branch | |
|----------|---|
| 6795 10h | Protect the rotate variable by p... Coin Newell 71072-6795-92f6d6 on runbot7.odoo.com 👍 age 10h time 20m |

✓ All is well — 2 successful checks ✓ 92f6d6d

✓ ci/runbot — runbot build 71072-6795-92f6d6 (runtim... [Details](#)

✓ legal/cia — Coin Newell Odoo CLA signature check [Details](#)

 odoo / odoo

Issues

Pull requests

Labels

Milestones

Filters ▾

🔍 is:pr is:open

🔗 745 Open ✓ 3,040 Closed

Author ▾

🔗 **Protect the rotate variable by putting it the other side of the modif...** ✓
#6795 opened 11 hours ago by colinnewell

Create own module for runbot

Customize to fit your needs

A first simple custo

- Official Odoo repo needed as fallback
- Official Odoo repo is already build by Odoo s.a.
- Official Odoo repo can be used to test new features
 - → Only build sticky branches

Add a field, Override update_git

```
class runbot_repo(models.Model):
    _inherit = "runbot.repo"

    nobuild = fields.Boolean("Do not build")

    @api.model
    def update_git(self, repo):
        super(runbot_repo, self).update_git(repo=repo)
        if repo.nobuild:
            self.env['runbot.build'].search([('repo_id', '=', repo.id),
                                             ('state', '=', 'pending'),
                                             ('branch_id.sticky', '=', False)
                                             ]).write({'state': 'done', 'result': 'skipped'})
```

```
<record id="view_repo_form" model="ir.ui.view">
  <field name="model">runbot.repo</field>
  <field name="inherit_id" ref="runbot.view_repo_form"/>
  <field name="arch" type="xml">
    <field name="modules" position="after">
      <field name="nobuild" />
    </field>
  </field>
</record>
```

A second one: add a job

- ✓ Test base
 - ✓ Test all
 - ✗ Restore customer DB
-
- Add a field for the db to restore
 - Restore the database over the existing xxx-all
 - Upgrade all modules on this database

Add a field, restore the db, do -u all

```
class runbot_repo(models.Model):
    _inherit = "runbot.repo"

    nobuild = fields.Boolean("Do not build")
    db_name = fields.Char("Database name to replicate")
```

```
class runbot_build(models.Model):
    _inherit = "runbot.build"

    @api.model
    def job_25_restore(self, build, lock_path, log_path):
        if not build.repo_id.db_name:
            return 0
        self.pg_createdb("%s-all" % build.dest)
        cmd = "pg_dump %s | psql %s-all" % (build.repo_id.db_name, build.dest)
        return self.spawn(cmd, lock_path, log_path, cpu_limit=None, shell=True)

    @api.model
    def job_26_upgrade(self, build, lock_path, log_path):
        if not build.repo_id.db_name:
            return 0
        cmd, mods = build.cmd()
        cmd += ['-d', '%s-all' % build.dest, '-u', 'all', '--stop-after-init',
            '--log-level=debug']
        return self.spawn(cmd, lock_path, log_path, cpu_limit=None)
```

A harder one: code coverage

- <http://pypi.python.org/pypi/coverage>
- Code coverage measurement for Python by Ned Batchelder
- When using coverage.py, need to be in instance folder for the .coverage creation
- Produce HTML report
- Link to the report in the runbot page
- Choose which repository needs coverage

Launch a process in a dir

```
class runbot_build(models.Model):
    _inherit = "runbot.build"

@api.model
def spawncwd(self, cmd, lock_path, log_path, cpu_limit=None, shell=False, cwd=None):
    def preexec_fn():
        os.setsid()
        if cpu_limit:
            # set soft cpulimit
            soft, hard = resource.getrlimit(resource.RLIMIT_CPU)
            r = resource.getrusage(resource.RUSAGE_SELF)
            cpu_time = r.ru_utime + r.ru_stime
            resource.setrlimit(resource.RLIMIT_CPU, (cpu_time + cpu_limit, hard))
        # close parent files
        os.closerange(3, os.sysconf("SC_OPEN_MAX"))
        lock(lock_path)
    out=open(log_path,"w")
    _logger.info("spawn: %s in %s stdout: %s", ' '.join(cmd), str(cwd), log_path)
    p=subprocess.Popen(cmd, stdout=out, stderr=out, preexec_fn=preexec_fn, shell=shell, cwd=cwd)
    return p.pid
```

Run coverage

```
class runbot_repo(models.Model):
    _inherit = "runbot.repo"

    nobuild = fields.Boolean("Do not build")
    db_name = fields.Char("Database name to replicate")
    docoverage = fields.Boolean("Do coverage report")
```

```
@api.model
def job_20_test_all(self, build, lock_path, log_path):
    if build.repo_id.docoverage:
        build._log('test_all', 'Start test all modules')
        path = build.path()
        self.pg_createdb("%s-all" % build.dest)
        cmd, mods = build.cmd()
        if grep(build.server("tools/config.py"), "test-enable"):
            cmd.append("--test-enable")
        cmd += ['-d', '%s-all' % build.dest, '-i', mods,
               '--stop-after-init', '--log-level=test',
               '--max-cron-threads=0']
        cmd = ['coverage', 'run', '--include=openERP/addons/*'] + cmd[1:]
        # reset job_start to an accurate job_20 job_time
        build.write({'job_start': now()})
        build._log('job_20_coverage', " ".join(cmd))
        return self.spawncwd(cmd, lock_path, log_path, cpu_limit=3500,
                              cwd=path)
    else:
        return super(runbot_build, self).job_20_test_all(build, lock_path,
                                                          log_path)
```

Produce report

```
@api.model
def job_22_coverage_report(self, build, lock_path, log_path):
    if build.repo_id.doccoverage:
        path = build.path()
        cmd, mods = build.cmd()
        if mods:
            include = ",".join(["openerp/addons/%s/" % mod.replace(" ", "")
                                for mod in mods.split(",")
                                ])
        else:
            include = "openerp/addons/"
        cmd = ['coverage', 'report', '--include=%s' % include]
        build._log('coverage_report', " ".join(cmd))
        return self.spawncwd(cmd, lock_path, log_path, cpu_limit=None,
                               cwd=path)
    else:
        return 0

@api.model
def job_23_coverage_report_html(self, build, lock_path, log_path):
    if build.repo_id.doccoverage:
        path = build.path()
        cmd, mods = build.cmd()
        if mods:
            include = ",".join(["openerp/addons/%s/" % mod for mod in mods])
        else:
            include = "openerp/addons/"
        cmd = ['coverage', 'html', '--include=%s' % include, "-d",
              "logs/coverage"]
        return self.spawncwd(cmd, lock_path, log_path, cpu_limit=None,
                               cwd=path)
    else:
        return 0
```


Link in the webpage

```
class RunbotControllerXP(runbot.RunbotController):  
  
    def build_info(self, build):  
        res = super(RunbotControllerXP, self).build_info(build)  
        res['doccoverage'] = build.repo_id.doccoverage  
        return res
```

```
<record id="view_repo_form" model="ir.ui.view">  
    <field name="model">runbot.repo</field>  
    <field name="inherit_id" ref="runbot.view_repo_form"/>  
    <field name="arch" type="xml">  
        <field name="modules" position="after">  
            <field name="nobuild" />  
            <field name="db_name" />  
            <field name="doccoverage" />  
        </field>  
    </field>  
</record>  
  
<template id="build_button" inherit_id="runbot.build_button" name="build_button_xp">  
    <xpath expr="//li[@t-if='"bu['host']"]' position="before">  
        <t t-if="bu['doccoverage']">  
            <li><a t-attf-href="http://{{bu['host']}}/runbot/static/build/#{bu['real_dest']}/logs/coverage/index.html"  
                target="_blank">Coverage <i class="fa fa-newspaper-o"/></a></li>  
        </t>  
    </xpath>  
</template>
```

Result

Merge br
nse

Logs

Coverage

Full base logs

Full all logs

Branch or pull

Commit

Compare

Runtime: 10ms

Port: 2012

Age: 10m

laptop-nse/runbot/static/build/00283-8-0-773e9f/logs/coverage/index.html

ort: 42%

| | <i>statements</i> | <i>missing</i> | <i>excluded</i> | <i>coverage</i> |
|-------------------------------------|-------------------|----------------|-----------------|-----------------|
| __init__ | 1 | 0 | 0 | 100% |
| account/__init__ | 19 | 0 | 0 | 100% |
| account/account | 1849 | 889 | 0 | 52% |
| account/account_analytic_line | 92 | 68 | 0 | 26% |
| account/account_bank | 55 | 2 | 0 | 96% |
| account/account_bank_statement | 512 | 287 | 0 | 44% |
| account/account_cash_statement | 178 | 110 | 0 | 38% |
| account/account_financial_report | 55 | 4 | 0 | 93% |
| account/account_invoice | 925 | 256 | 0 | 72% |
| account/account_move_line | 962 | 415 | 0 | 57% |
| openerp/addons/account/company | 5 | 0 | 0 | 100% |
| openerp/addons/account/edi/__init__ | 1 | 0 | 0 | 100% |
| openerp/addons/account/edi/invoice | 121 | 26 | 0 | 79% |
| openerp/addons/account/installer | 97 | 54 | 0 | 44% |
| openerp/addons/account/ir_sequence | 19 | 2 | 0 | 89% |
| openerp/addons/account/partner | 159 | 68 | 0 | 57% |

Conclusion

Your own runbot

- Deployable on your own infrastructure
- Linked to your GitHub account
- Access to your repos
- Part of the dev process
- Easy to use for everyone
- A communication tool
- A dev tool
- A quick test tool
- Customizable to fit your needs

- Source code :
<https://bitbucket.org/nseinlet/xperience2015>

Thank You

Let's integrate

Odoo

sales@odoo.com

+32 (0) 2 290 34 90

www.odoo.com

R&D and services office

Chaussée de Namur 40

B-1367 Grand Rosière

Sales office

Avenue Van Nieuwenhuyse 5

B-1160 Brussels