DE-MYSTIFYING CONTRIBUTING TO POSTGRESQL

PGCON OTTAWA
2018-05-31

Lætitia AVROT
Loxodata
WHO

Lætitia Avrot

- PostgreSQL consultant and teacher
- DBA PostgreSQL for more than 10 years (and also Oracle and SQL Server)
- @l_avrot
LOXODATA

Company built on 3 essential pillars

PostgreSQL  DevOps  Cloud
WHAT

Contributing to PostgreSQL

- The PostgreSQL community
- The PostgreSQL projects and tools
- The story of my patch
- How you can help
THE COMMUNITY
The PostgreSQL Community
The core team

- 5 members
- Independant
- Act as project managers
The PostgreSQL Community

Committer

- More or less 15 members
- Have git push permissions
- Responsible for code quality
Developpers

- C code
- Need to comply with style guide
- Need to comment (a lot)
Reviewers

- No need to be a dev
- But technical background needed
- If you don't understand it, others won't
Translators

- No need to be a dev
- Software messages
- Documentation
- Others (press releases...)
Advocacy

- Promote PostgreSQL use
- Share informations about PostgreSQL
- Regional press contacts
Associations

- Small to large groups of users
- National or international
Local user groups

- Local (Cities or Countries)
- Mostly Meetups
Local User Groups and Meetups

- User gathering
- Sharing thoughts, use cases, issues...
PROJECTS
The PostgreSQL projects
The PostgreSQL projects

PostgreSQL
The PostgreSQL projects

PostgreSQL

Translations
The PostgreSQL projects

PostgreSQL

Translations

Contribs and Tools
The PostgreSQL projects

- PostgreSQL
- Contribs and Tools
- Translations
- Project Mgt
The PostgreSQL projects

PostgreSQL

Translations

Contribs and Tools

Project Mgt

Packages
The PostgreSQL projects

- PostgreSQL
- Translations
- Contribs and Tools
- Communication
- Packages

@lavrot
The road map

- 1 major release per year
- 1 minor release per quarter (minimum)
Commitfests

- 1 month long
- When most patches are committed
- Needs a commitFest Manager
commitfest.postgresql.org
TOOLS
Websites
Websites

www.postgresql.org
wiki.postgresql.org
www.postgresql.org/docs
planet.postgresql.org
Mailing-lists

- Bug submission (use the form)
- pgsql-novice for newcomers
- Special lists for associations and local groups
- pgsql-hackers (be careful, these guys are SO chatty)
Habits about mailing-lists

- Use inline replying
- Reply to all
- Be respectfull (but who needs that reminder ?)
Security issues:

security@postgresql.org
IRC

- Live chat with other PostgreSQL users
- Don't ask to ask, just ask!
- Chanel #postgresql on irc.freenode.net
irc.freenode.net
Twitter

- Stay in touch with other PostgreSQL users
- Brand new community account: @postgresql
Other ways to stay in touch

- Postgres Slack
- Postgres hangout
- Forums (as stackexchange)
Git

• if you don't know git, don't be afraid
  ▪ git clone
  ▪ git pull (--rebase)
  ▪ git diff

• Use the PostgreSQL Wiki page
MY FIRST PATCH
What's a patch?

A patch is a piece of software designed to update a computer program or its supporting data, to fix or improve it.

My story

- Missing section in ALTER TABLE documentation
- Discussion with peers
- Bug reporting
- Patch creation with guru mentors
- Patch submission
### Missing section in ALTER TABLE synopsys

```sql
ADD | COLUMN \( column \) \( data \_type \) | COLLATE \( collation \) \( [ \) \( column \_constraint \) \( ] \) \( [ \) \( \) \( ] \) \( [ \) \( . . \) \( ] \) 
DROP \( COLUMN \) | IF EXISTS \( \) \( column \) \( [ \) \( RESTRICT \) \( [ \) \( CASCADE \) \( ] \) 
ALTER \( COLUMN \) \( column \) \( \) \( SET \) \( DATA \) \( \) \( TYPE \) \( data \_type \) \( \) \( COLLATE \) \( collation \) \( \) \( [ \) \( USING \) \( expression \) \( ] \) 
ALTER \( COLUMN \) \( column \) \( \) \( SET DEFAULT \) \( expression \) 
ALTER \( COLUMN \) \( column \) \( \) \( DROP DEFAULT \) 
ALTER \( COLUMN \) \( column \) \( \) \( SET \) \( | \) \( DROP \) \( | \) \( NOT \) \( NULL \) 
ALTER \( COLUMN \) \( column \) \( \) \( SET STATISTICS \) \( integer \) 
ALTER \( COLUMN \) \( column \) \( \) \( SET \) \( \) \( attribute \_option \) \( \) \( = \) \( value \) \( [ \) \( . . . \) \( ] \) 
ALTER \( COLUMN \) \( column \) \( \) \( RESET \) \( \) \( \) \( attribute \_option \) \( \) \( [ \) \( . . . \) \( ] \) 
ALTER \( COLUMN \) \( column \) \( \) \( SET \) \( STORAGE \) \( \) \( PLAIN \) \( \) \( EXTERNAL \) \( \) \( EXTENDED \) \( \) \( MAIN \) 
ADD \( table \_constraint \) \( \) \( table \_constraint \_using \) \( index \) 
VALIDATE \( CONSTRAINT \) \( constraint \_name \) 
DROP \( CONSTRAINT \) \( \) \( \) \( \) \( constraint \_name \) \( RESTRICT \) \( CASCADE \) 
DISABLE \( TRIGGER \) \( trigger \_name \) \( ALL \) \( USER \) 
ENABLE \( TRIGGER \) \( trigger \_name \) \( ALL \) \( USER \) 
ENABLE \( REPLICATION \) \( TRIGGER \) \( trigger \_name \) 
DISABLE REWRITE RULE \( rewrite \_rule \_name \) 
ENABLE \( REWRITE \) \( rewrite \_rule \_name \) 
EXECUTE \( \) \( get \_index \_name \) 
SET WITHOUT CLUSTER 
SET WITH OIDS 
SET WITHOUT OIDS 
SET \( storage \_parameter \) \( \) \( \) \( value \) \( [ \) \( . . . \) \( ] \) 
RESET \( \) \( storage \_parameter \) \( \) \( \) \( [ \) \( . . . \) \( ] \) 
```

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@lavrot
Creating the patch

- PostgreSQL git clone
- Building from source code
- Building documentation from source code
- Copy/Paste missing section from CREATE TABLE to ALTER TABLE
- Re-building documentation from source code
Finding where to make your modifications

- Use grep
- Ask around!
- Think (a little)
Finding what you're looking for in directories

https://www.postgresql.org/docs/current/static/sql-altertable.html
A simple copy/paste
git diff

- With context
- Use the wiki Creating clean patches page
- Format your git diff output
But sometimes, even the best men don't follow instructions...

On Fri, Aug 3, 2012 at 2:56 AM, Qi Huang <huangqiyx(at)outlook(dot)com> wrote:

> Hi, hackers
> I was exporting my project to a patch file. As the patch review
> requires, the patch needs to be in context diff format
> (http://wiki.postgresql.org/wiki/Reviewing_a_Patch). But the git diff
> exports in a format similar to unified format. What is everyone doing with
> patching currently? Is there any standard way?

When I want a context diff, I just do:

```
git diff | filterdiff --format=context
```

--

Robert Haas
EnterpriseDB: [http://www.enterprisedb.com](http://www.enterprisedb.com)
The Enterprise PostgreSQL company
git diff without context to the left,


git diff with context to the right
12:27 $ git diff | filterdiff
\--format=context > \
./patch/adding_table_constraint_\ndescription_in_ALTER_TABLE_synopsis_v1.patch
My submission

Hi,

In documentation, I’ve found that table_constraint is used in the ALTER TABLE synopsis but that definition of table_constraint is missing, so I submitted bug #16679.

I found the table_constraint definition in the CREATE TABLE synopsis and I just copied/pasted it on the ALTER TABLE synopsis.

The patch should apply to MASTER. I build and tested it successfully on my computer.

There shouldn’t be any platform-specific content.

You will find enclosed my patch. I tried my best to follow instructions on how to submit a patch.

Regards,

Lefetra

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Use the Submitting a patch Wiki page
The result

Thanks, this looks pretty reasonable, but did you happen to look for any other keywords in the ALTER TABLE that should really be in ALTER TABLE also?

I'm specifically looking at, at least, partition_bound_spec. Maybe you could propose an updated patch which addresses that also, and any other cases you find?

Thanks again!
Patch corrected

Ah, yes. I remember having left out partition_bound_spec simply because I thought it was kind of how it was supposed to be done. Seeing that neither column_constraint and table_constraint were expanded in the ALTER TABLE's synopsis.

It seems that there are indeed a couple of other things that need to be brought over to ALTER TABLE synopsis including partition_bound_spec. 9f295c08f877 [1] added table_constraint, but missed to add the description of index_parameters and exclude_element which are referenced therein.

Attached find updated version of the Lætitia's patch.

Thanks,
Amit
<table>
<thead>
<tr>
<th>ALTER TABLE</th>
<th>Needs review</th>
<th>Lætitia AVROT (arkhena)</th>
<th>Amit Langote (amitlan), Vik Fearing (xocolatl)</th>
<th>sfrost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing column_constraint</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>explanation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

@l_avrot
Oh no!

Here's an update to move the new stuff to the correct side of the closing "</synopsis>". Builds for me, and the typesetting looks OK. I'm not sure why the preexisting bogo-productions have inconsistent indentation levels (looking at table_constraint_index) but that's not this patch's fault.
And another section was missing!

Thanks for fixing that.

I noticed that partition bound spec in the patch is missing hash partition bound syntax that was added after the original patch was written. Fixed in the attached.

Thanks,
Amit
<table>
<thead>
<tr>
<th>ALTER TABLE</th>
<th>Ready for Committer</th>
<th>Lætitia AVROT (arkhena)</th>
<th>Amit Langote (amitlan), Vik Fearing (xocolatl)</th>
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</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
And it's committed!
... Now I can die without regret!

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**Improve ALTER TABLE synopsis**

**author**  Stephen Frost <sfrost@snowman.net>
Fri, 2 Feb 2018 11:30:04 +0100 (05:30 -0500)

**committer**  Stephen Frost <sfrost@snowman.net>
Fri, 2 Feb 2018 11:30:04 +0100 (05:30 -0500)

**commit**  5a226857617dec8c84b5f8f538947125134f212

**tree**  e736755e021700002e3d5ebe44b5449466590b5d2

**parent**  ad25a6b1f25ba09c86c903c8e266390875f

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**Improve ALTER TABLE synopsis**

Add into the ALTER TABLE synopsis the definition of:

- partition bound spec,
- column constraint,
- index parameters and
- exclude element.

Initial patch by Letitia Avrot, with further improvements by Amit Langote and Thomas Munro.
What I learnt

- Anyone can help (even me!)
- You can ask for help, you will find answers
- It's OK to have multiple refactoring to do (Well, it's quite always the case)
What next?

- Correcting some spelling errors in french translation
- Studying the code
- Observing reviewing in January Commit fest
- Proposed conf talks (and got accepted each time for now)
HOW YOU CAN HELP
Simple contributor

- uses PostgreSQL
- shares your experience
- answers other users' questions
Great Contributor

- Creates/helps organizing user group/Meetup
- Creates/helps organizing event
- Invests time/money in PostgreSQL Associations
Super Contributor

- Reports bugs
- Creates patches
- Reviews patches
CONCLUSION

KEEP CALM
AND
LISTEN TO THE CONCLUSION
It's all about you

- You're already a level 1 contributor
- So, next step?
Anyone can patch
Please join us!
Questions?

Special thanks to Dimitri, Greg, Vik, Robert and Alvaro for your patience and time.

Thanks to Frits Ahlefeldt, Freepik, Grzm, Alvaro Herrera, Pixabay and Xkcd.com for illustrations and photos.