

Graphite

Graphite

no, not *that* graphite

What is Graphite?

What is Graphite
not?

Component

Graphite

Carbon

Whisper

Setting up Graphite

Components

Procedure

`#ifdef PERL`

Additional References

Demo/Questions

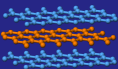
Kurt Starsinic <kstarsinic@gmail.com>

<http://github.com/kstarsinic/presentations/>

<http://www.cpan.org/authors/id/K/KS/KSTAR/>

Philadelphia Perl Mongers

November 5, 2012



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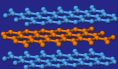
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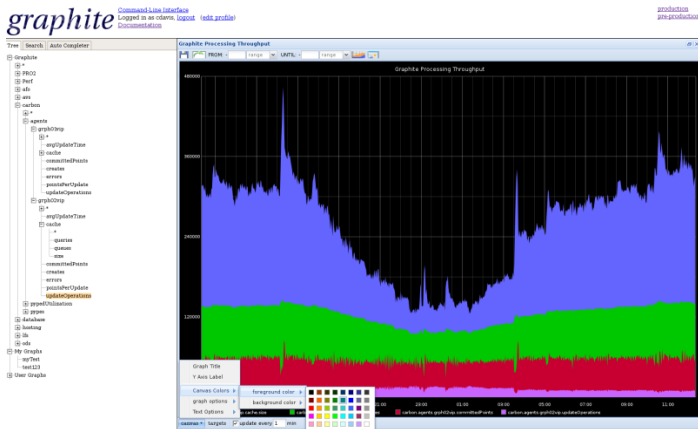
Demo/Questions

Graphite (SIL)	http://graphite.sil.org/
Alice Graphite	http://alice.loria.fr/ WIKI/index.php/Graphite/Graphite
Graphite CAD	http://www.ashlar.com/ 2d-3d-drafting/2d-3d-cad-graphite.html
Graphite Scalable Realtime Graphing!	http://graphite.wikidot.com/

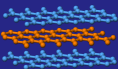


What is Graphite?

A timeseries data dashboard



source: <http://graphite.wdfiles.com/local-files/screen-shots/graphite.fullscreen.800.png>



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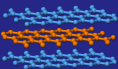
A timeseries data dashboard

Functions:

- Web application framework
- Numeric timeseries round robin database
- Graphing and rendering engine

Components:

- graphite-web
- carbon
- whisper



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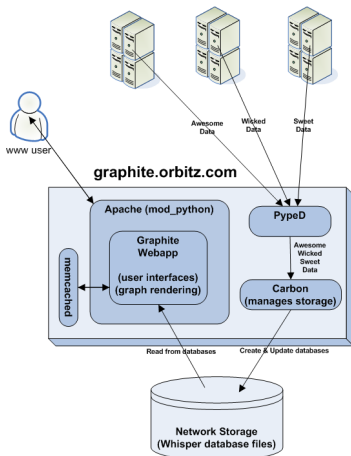
Components

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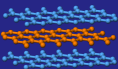
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Additional References

Demo/Questions



source: <http://graphite.wikidot.com/local-files/high-level-diagram/Graphite%20High%20Level.png>



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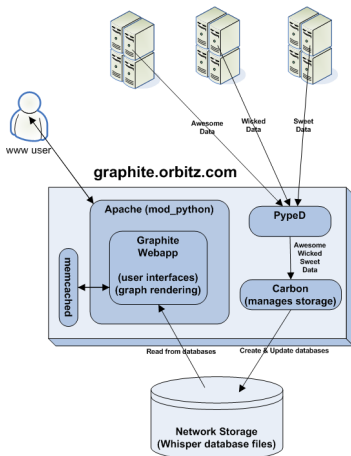
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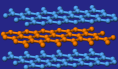
Demo/Questions



Legend:

- apache/graphite (web app)
- carbon (storage manager)
- whisper (round robin database)

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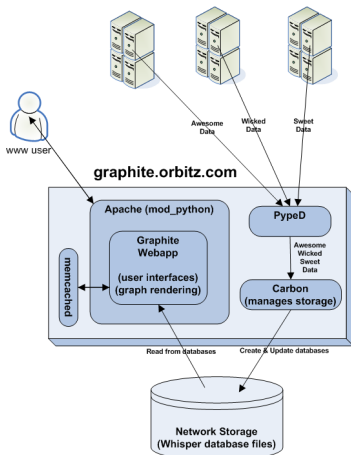
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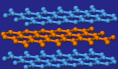
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- apache/graphite (web app)
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Myth:

- Use `mod_wsgi`, *not* `mod_python`
- PypeD isn't necessary, and isn't exciting
- memcached is optional

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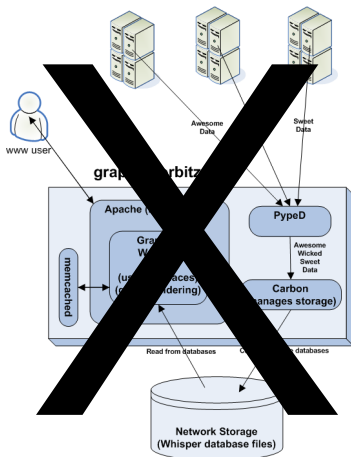
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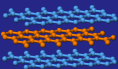
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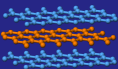
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Additional References

Demo/Questions

- A general-purpose database
- A general-purpose graphing toolkit
- Written in Perl



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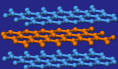
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Additional References

Demo/Questions

- Web app:
<http://graphite.wikidot.com/url-api-reference>
- Command line:
<http://graphite.wikidot.com/cli-reference>



Carbon

carbon-agent

Master process (starts others)

Listens on a port (default 2003) for inserts

Simple syntax:

```
printf SOCKET "%s %f %d",  
           $path, $value, $time
```

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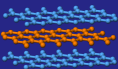
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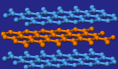
Simple syntax:

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carbon-cache

Receives updates from carbon-agent, aggregates them, writes them to carbon-persister as quickly as possible

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carbon-persister Writes updates to disk via whisper API

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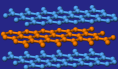
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Q: Why so many moving parts?

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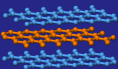
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carbon-persister

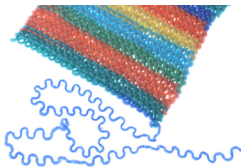
Writes updates to disk via whisper API

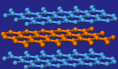
Q:

Why so many moving parts?

A:

Because python's "threading" model isn't.





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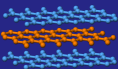
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Additional References

Demo/Questions

Whisper

- Similar to rrd, but . . .
- Allows out-of-order inserts
- Allows irregularly-spaced inserts
- Allows bulk inserts
- <http://graphite.wikidot.com/whisper>



Setting up Graphite

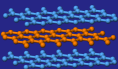
Components

Required:

- `python` (2.4+)
- `pycairo` (with PNG backend support)
- `apache` with `mod_wsgi`
- `django` (Python MVC framework for web applications) + `django-tagging`
- `twisted` (Python event management framework)
- `sqlite3`, `mysql`, `postgresql`, or `ado_mssql`

Optional:

- *`python-ldap`* (for LDAP-based web authentication)
- *`memcached` & `python-memcached`* (for performance boost)
- *`python-sqlite2`*
- *`collectd` & `collectd-graphite`* (to collect system stats)



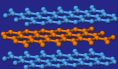
Setting up Graphite

Procedure

Do this:

- Read: <http://graphite.wikidot.com/installation>
- Apply:
<https://github.com/graphite-project/carbon/pull/44>
- Check permissions: `/opt/graphite/storage/log/`
- Start apache: `apachectl start`
- Start carbon: `cd /opt/graphite/; python bin/carbon-cache.py start`
- View: <http://localhost/>

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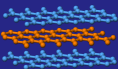
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Caveats

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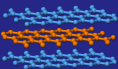
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- Figure out file ownerships and permissions first

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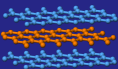
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- Figure out file ownerships and permissions first
- Do *not* enable `mod_python`

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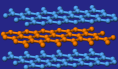
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- *Do* enable `mod_wsgi`



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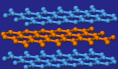
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- Figure out file ownerships and permissions first
- Do *not* enable `mod_python`
- *Do* enable `mod_wsgi`
- Apply the patch!



#ifdef PERL

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collectd-graphite

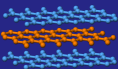
[https://github.com/joemiller/
collectd-graphite](https://github.com/joemiller/collectd-graphite)

collectd-perl

[http://collectd.org/documentation/
manpages/collectd-perl.5.shtml](http://collectd.org/documentation/
manpages/collectd-perl.5.shtml)

Net::Graphite

[http://search.cpan.org/~slanning/
Net-Graphite-0.10/](http://search.cpan.org/~slanning/
Net-Graphite-0.10/)



Additional References

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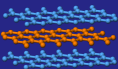
Procedure

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Additional References

Demo/Questions

Graphite	http://graphite.wikidot.com/ http://graphite.readthedocs.org/ http://www.aosabook.org/en/graphite.html
collectd	http://collectd.org/
rrdtool	http://logio.org/



Demo/Questions

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Additional References

Demo/Questions

- Demo
- Questions
- Where are we drinking?