

Crash Reporting: Mozilla's Open Source Solution

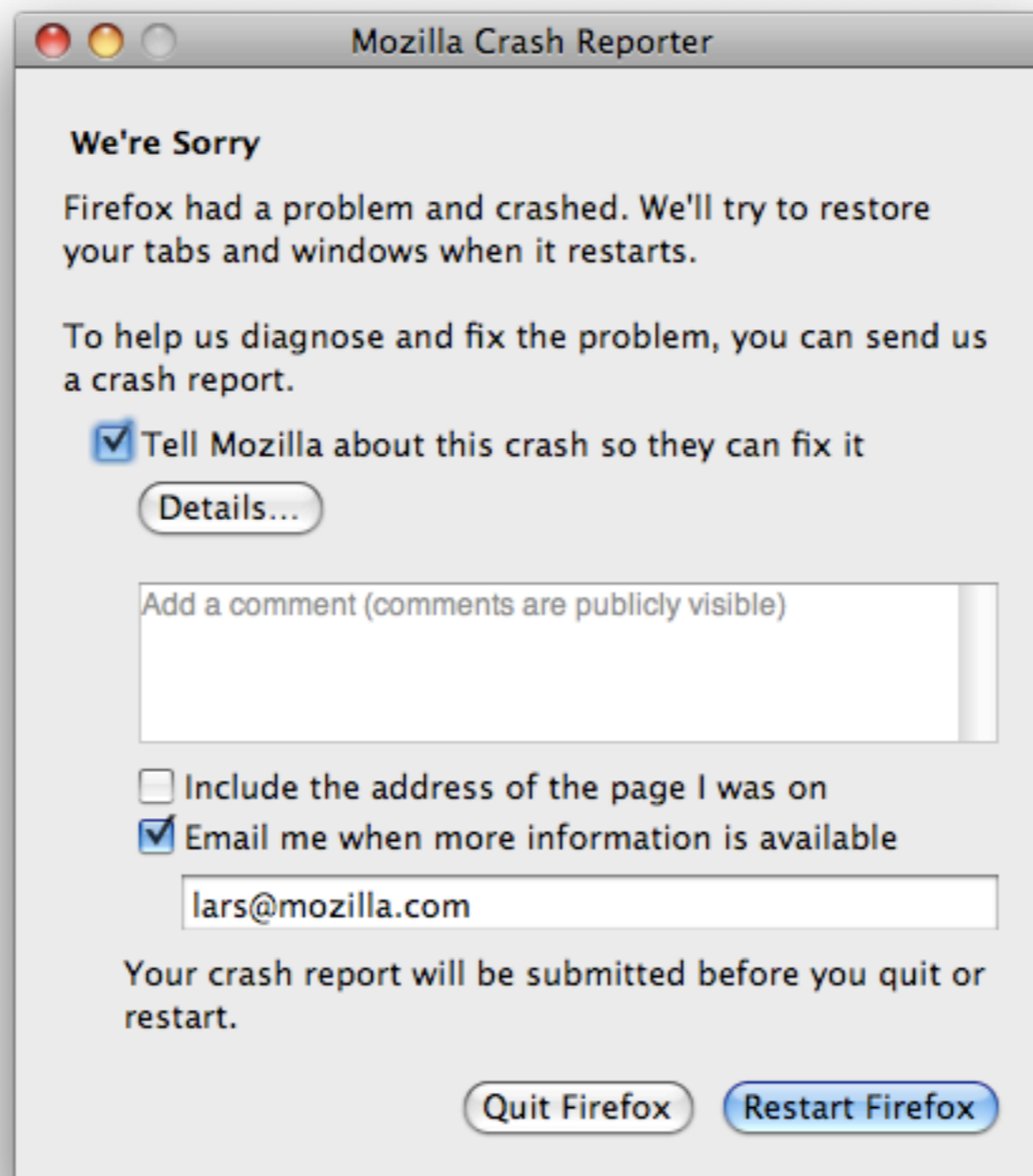
K Lars Lohn
Ted Mielczarek
Austin King



Friday, July 24, 2009

Howdy, I'm Lars from Mozilla, I'm here today with my colleagues, Ted Mill-char-ek and Austin King to talk about Crash Reporting.

What is it?



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Have you ever seen Firefox crash? Have you ever wondered what happens after you hit the “restart firefox” button?

In the next 45 minutes, we’re going to take you down the rabbit hole and show you what we do. We want our processes to be open.

When you experience a problem with any Mozilla product, we want everyone, not just the developers, to watch the flow of information about a problem for its initial occurrence, through data collection and triage, on to Bugzilla and to an eventual resolution.

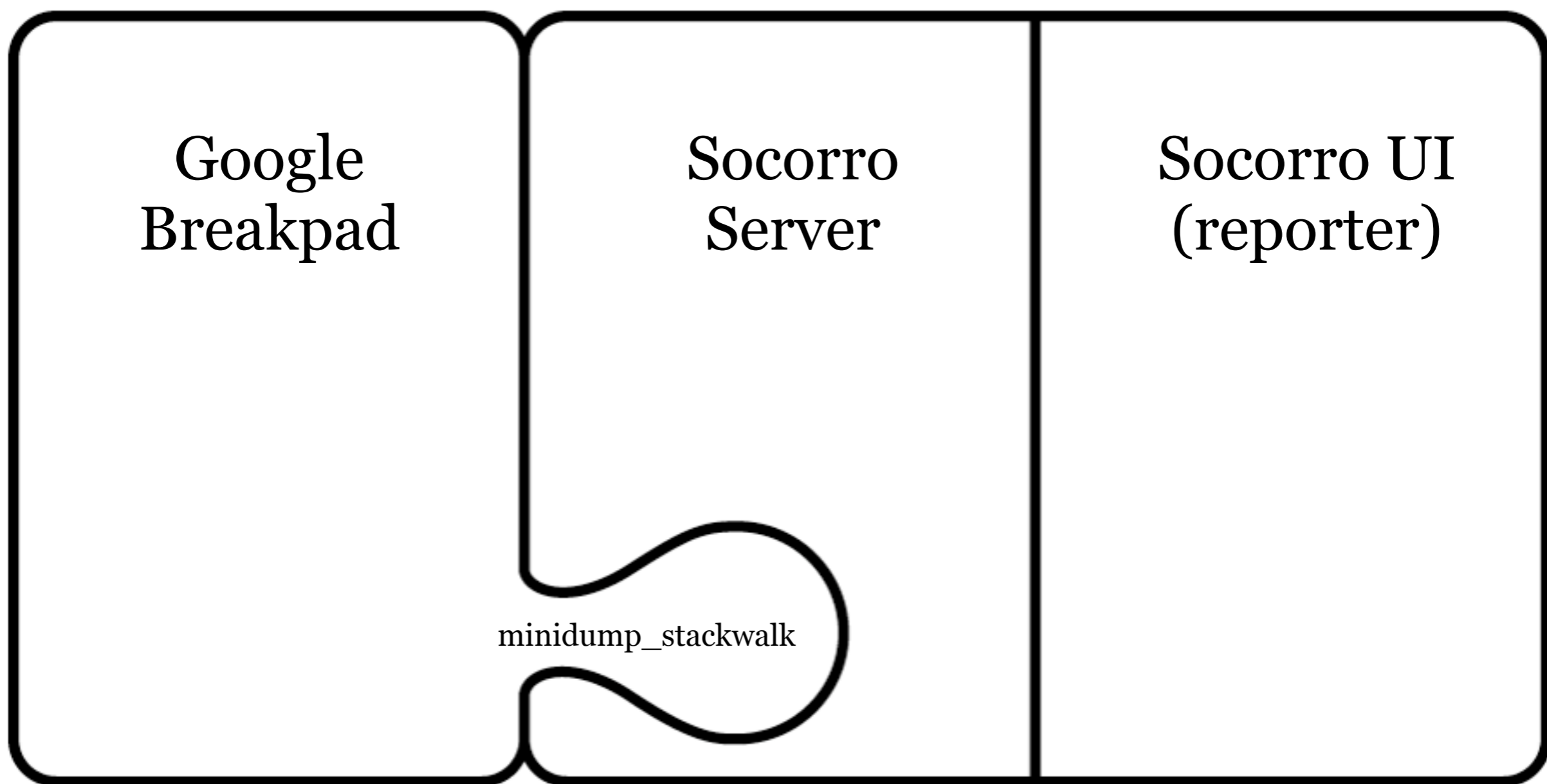
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information
to the developers
about the state of an application
during a catastrophic failure.



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Crash reporting is the transmission of information about the state of an application during a catastrophic failure to the developers.

The goal is to give the developers information that they would not otherwise have had.



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Our crash reporting system can be divided into three parts.

Breakpad – a google project – this code lives mainly within the Firefox application

Socorro (in two movements) the backend server and the user interface running at Mozilla.

written in three languages <click> <click> <click>

Ted, Austin and I are the three developers in charge of the three sections. We're going to talk in turn about our sections.

Google
Breakpad

Socorro
Server

Socorro UI
(reporter)

`minidump_stackwalk`

C++



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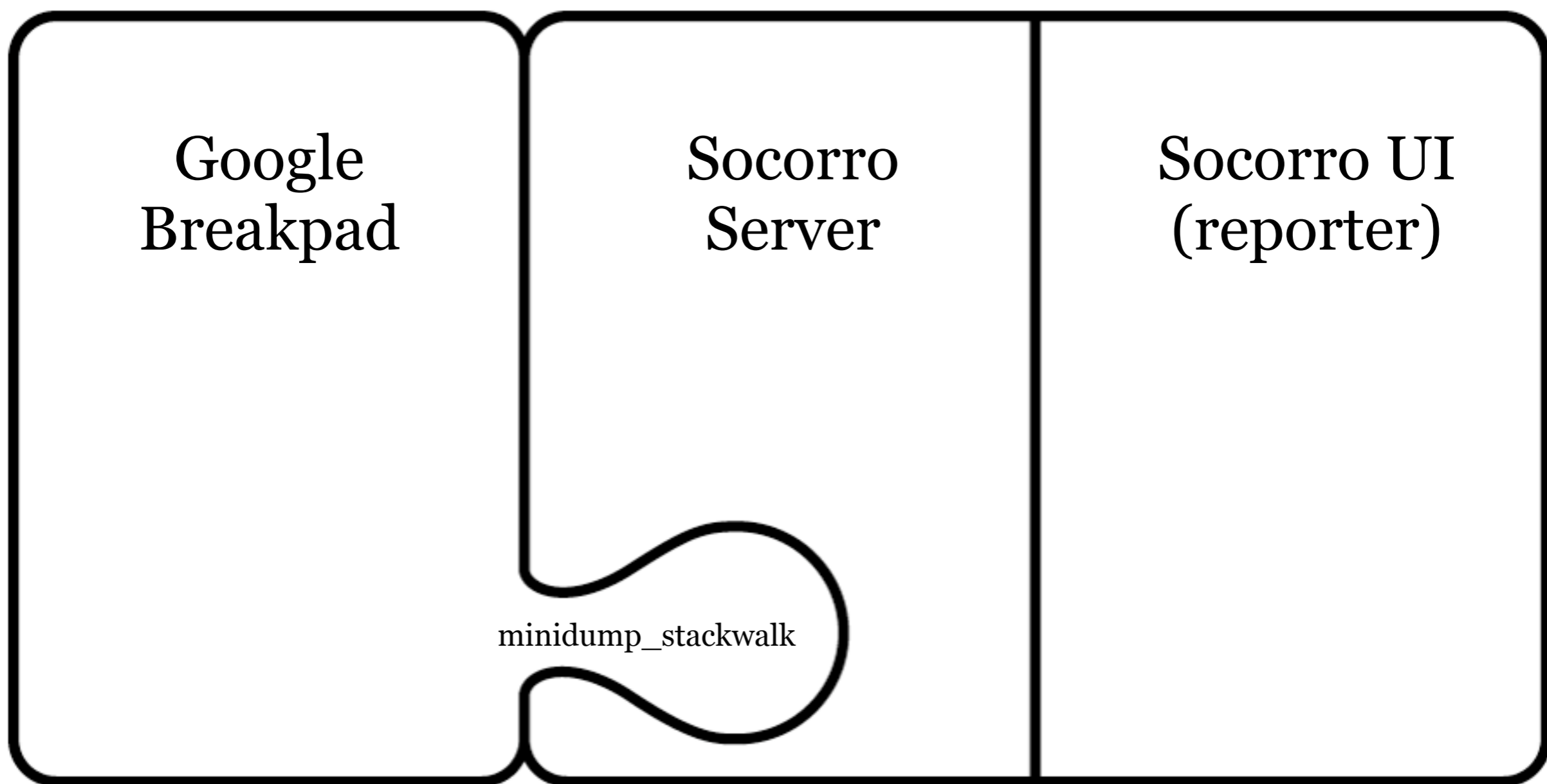
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Google Breakpad



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Google Breakpad

- Open Source project started by Google
 - BSD licensed:
<http://code.google.com/p/google-breakpad/>
- Client-side support for Linux (x86), Windows (x86), OS X (x86/PPC), Solaris (x86/SPARC)
- Server-side runs on POSIX systems



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Used by a few applications you might know: Firefox, Chrome, Google Earth
Supports a number of platforms as clients, the server side runs on POSIX systems.

Why Use It?

- For Mozilla:
 - Hundreds of developers
 - Hundreds of **millions** of users
- Difficult to reproduce issues
- Get crash reports from **any** user on a standard release build



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For us, it gives us these benefits:

The number of users is so much greater than the number of developers, so that larger group will always encounter problems that developers never see. You may have timing sensitive bugs or bugs that only occur when certain third party software is installed.

For Mozilla, the sheer number of webpages on the internet guarantees that users will hit unique situations every day.

In addition, every user becomes a source of information about crashes.

Breakpad Pieces

- Build-time (src/tools/{platform}):
 - dump_syms: extract debug symbols from native format to textual format
- Client-side (src/client/{platform})
 - Exception Handler
 - Crash Report Sender
- Server-side (src/processor)



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Breakpad consists of three separate sets of code:

- * build time tool to extract debug symbols to a common textual format
- * two client side libraries:
 - "Exception Handler" - catching crashes and doing something about it
 - "Crash Report Sender" - sending the results to a server for handling
- * server side libraries and tools for turning binary reports into useful data

Breakpad Basics

- Build application with debug info
- Extract debug symbols to textual format during build
- Install exception handler on startup
- Send crash report from exception handler
- Server marries crash report with debug symbols to produce stack trace



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Using Breakpad in your application can be broken down along those lines:
Steps you take when you build your application for distribution to users (build, extract debug info)
Steps your application takes to catch and submit crashes (handler, sender)
Steps the server takes to get the useful data out of the report (processor)

Exception Handler

- Create ExceptionHandler object with callback
- On crash, Breakpad writes crash data and calls your callback
- Your callback does something useful



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The exception handler is the key part that lets you handle crashes in your application. You provide a callback function, and when the application crashes Breakpad writes out information about the state of the application to disk, then calls your callback with the path to that data file ("minidump"). You can then do something useful with it (although probably in a separate process, since this one has crashed!) In Firefox, we spawn a separate crash reporter process.

Crash report sender

- Varies per-OS, but boils down to:
 - Send(URL, parameters, dumpfile)
 - Sends via HTTP POST
- Not included for OS X (easy to do with Cocoa)



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Once you have a crash report, you need to send it to your server for processing. Breakpad provides support for sending via HTTP POST. The minidump is sent as a file upload, other params can be sent as form data.

Server-side

- `minidump_stackwalk </path/to/dump>`
`[</path/to/symbols>]`
- Produces stack trace, with function names + source info if available
- Intended as a “sample” application, but Mozilla is using in production
- Breakpad libraries provide greater flexibility at cost of writing more code



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The final piece of Breakpad is the processor, which can take a crash report along with the symbols from the build and produce a stack trace. The command line tool that does this is called `minidump_stackwalk`, it simply takes the crash report and symbol path on the command line. You can go further by using the processor code as a library, but you'll need to write some C++ glue code.

Socorro Server



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Socorro Server

- Collector
- Monitor
- Processor
- Data Aggregators as cron jobs
- Data Cleanup as cron jobs

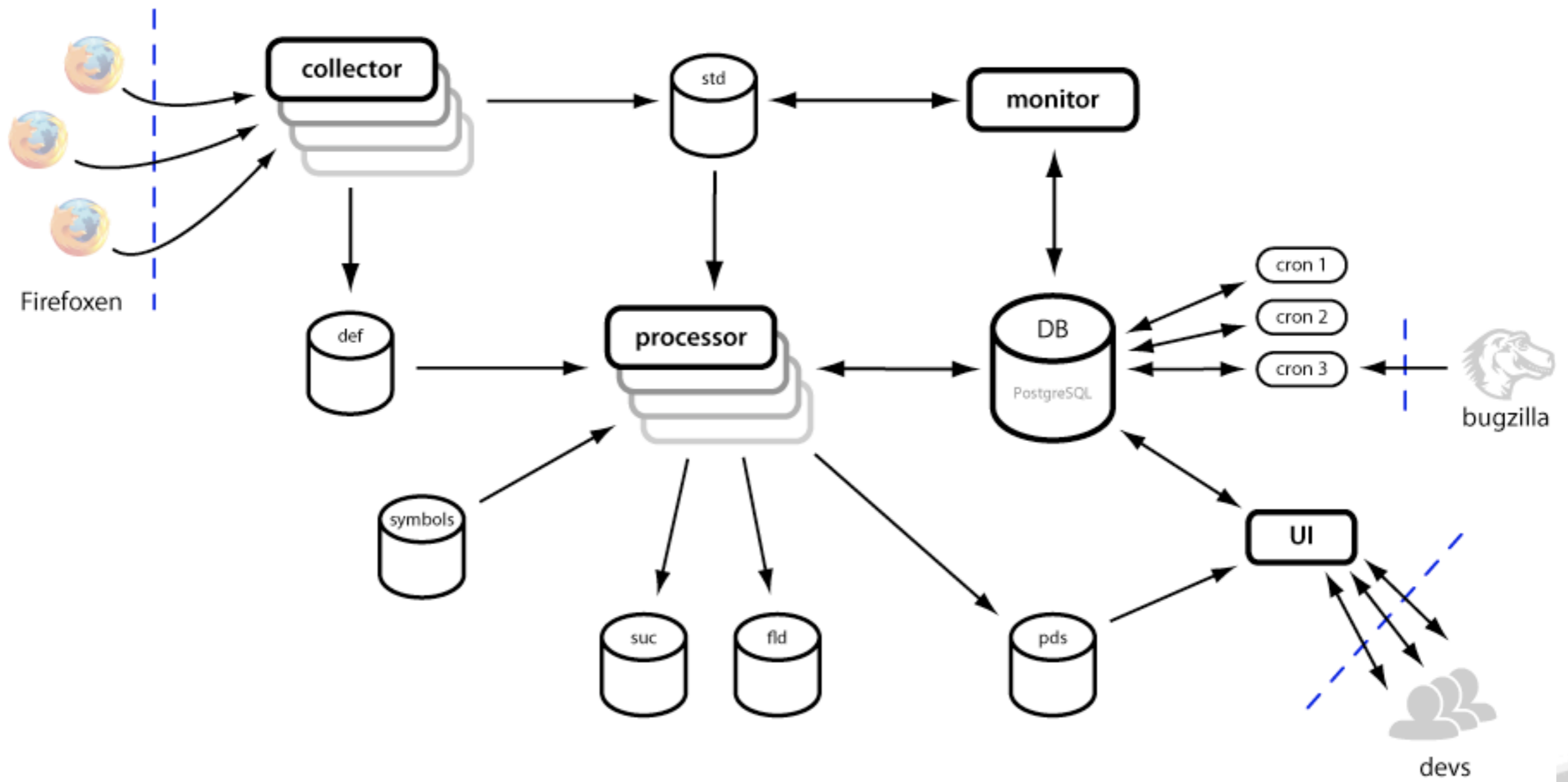


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The Socorro Server consists of several long running processes: the Collectors, the Monitor and the Processors.

There are also several processes that run as periodic cron jobs.

These cron jobs are in charge of generating aggregate information for reports as well as periodic system maintenance of file system storage.



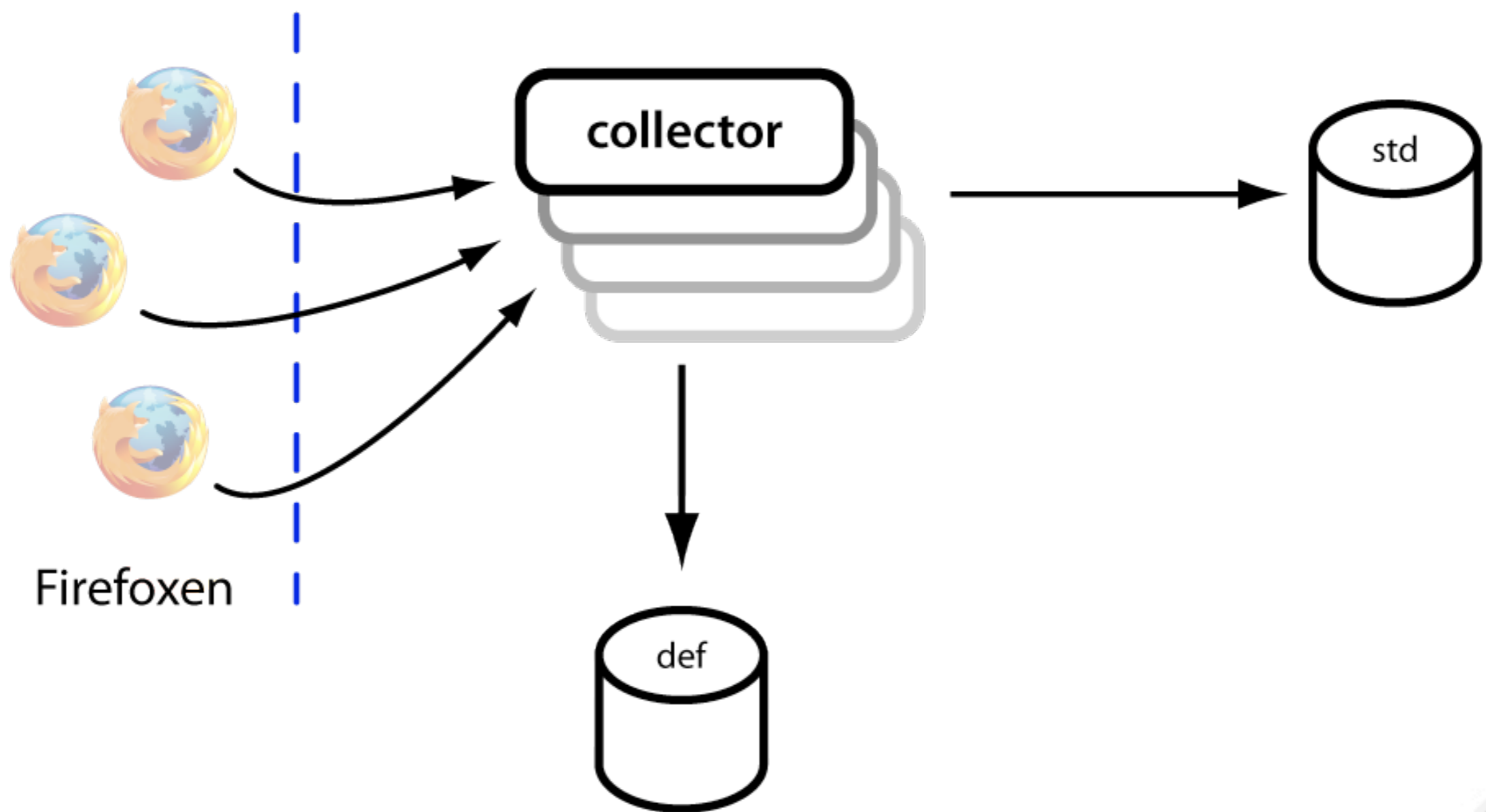
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This is an overview of the data flow whole system. It shows the long running processes as well as the aggregate and clean up jobs, just indicated as cron 1 through 3. There are actually more of them, but this is an overview, so we're going to gloss over some details.

You'll notice here that we've got lots of different data storage areas. Off the the right of center, we've got our instance of PostgreSQL. This is the heart of the system: it stores data about crashes as well as serves as a queuing system to coordinate the timing of processes.

We're going to look at the data flow - how crash information actually moves through the system

First, the collector.



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First we'll focus on Collector.

This is a python script running under Apache using mod-python. When Firefox crashes, in a last ditch effort before it quits, it sends off an http post of crash information to these Collectors. There can be any number of them, load balanced out front with whatever suits your fancy. We use Netscaler.

<CLICK>

When collector receives a crash, it examines the meta information about the crash: the product, the version, etc. At this point it can make some snap decisions in a process called "throttling" on whether to pass the crash on for further processing, refuse it or dump it into a deferred storage for later use.

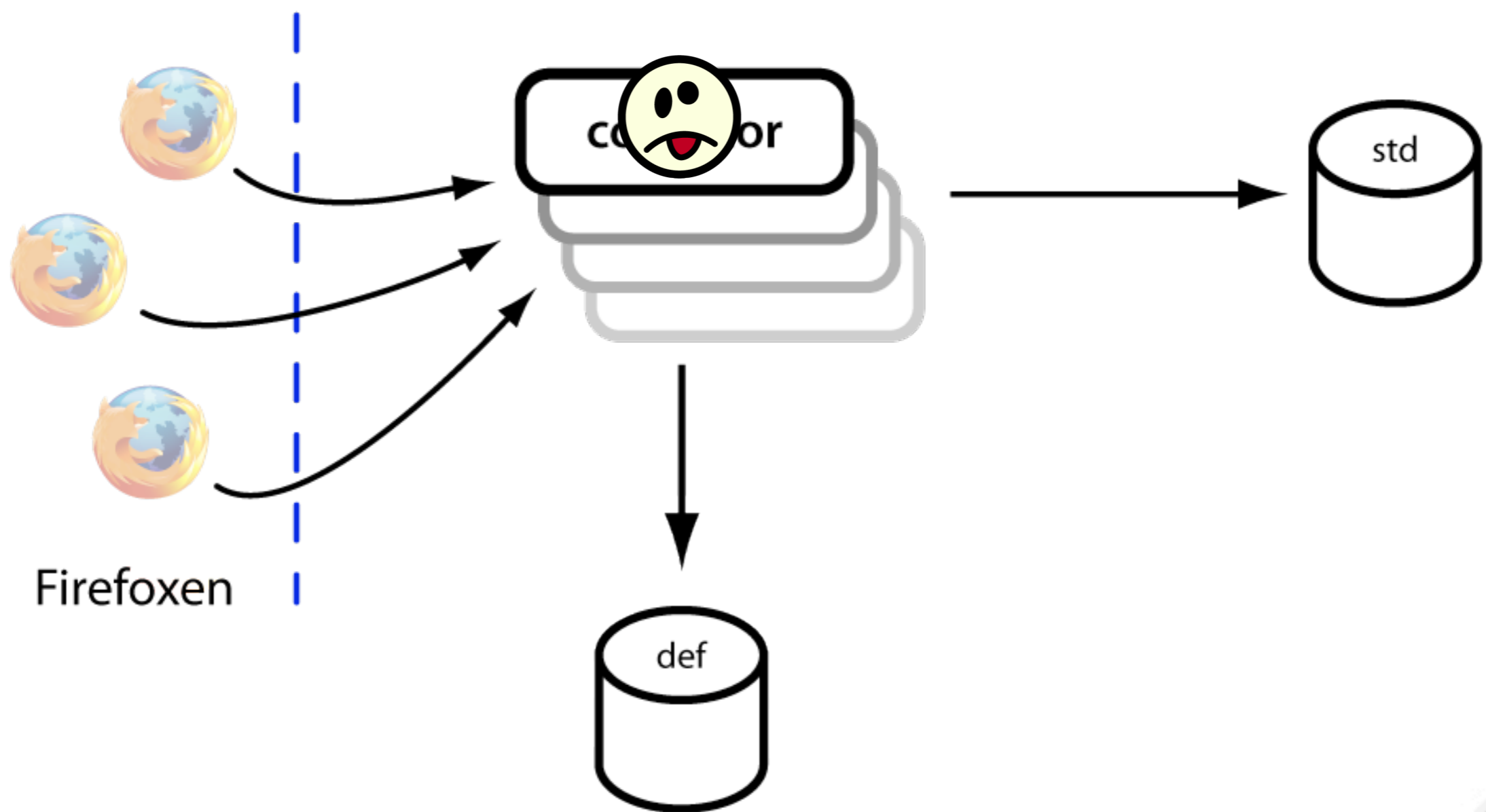
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When we finally do accept a crash (and we accept only about 10%), it get assigned a 32 character uuid and dropped into "standard" storage.



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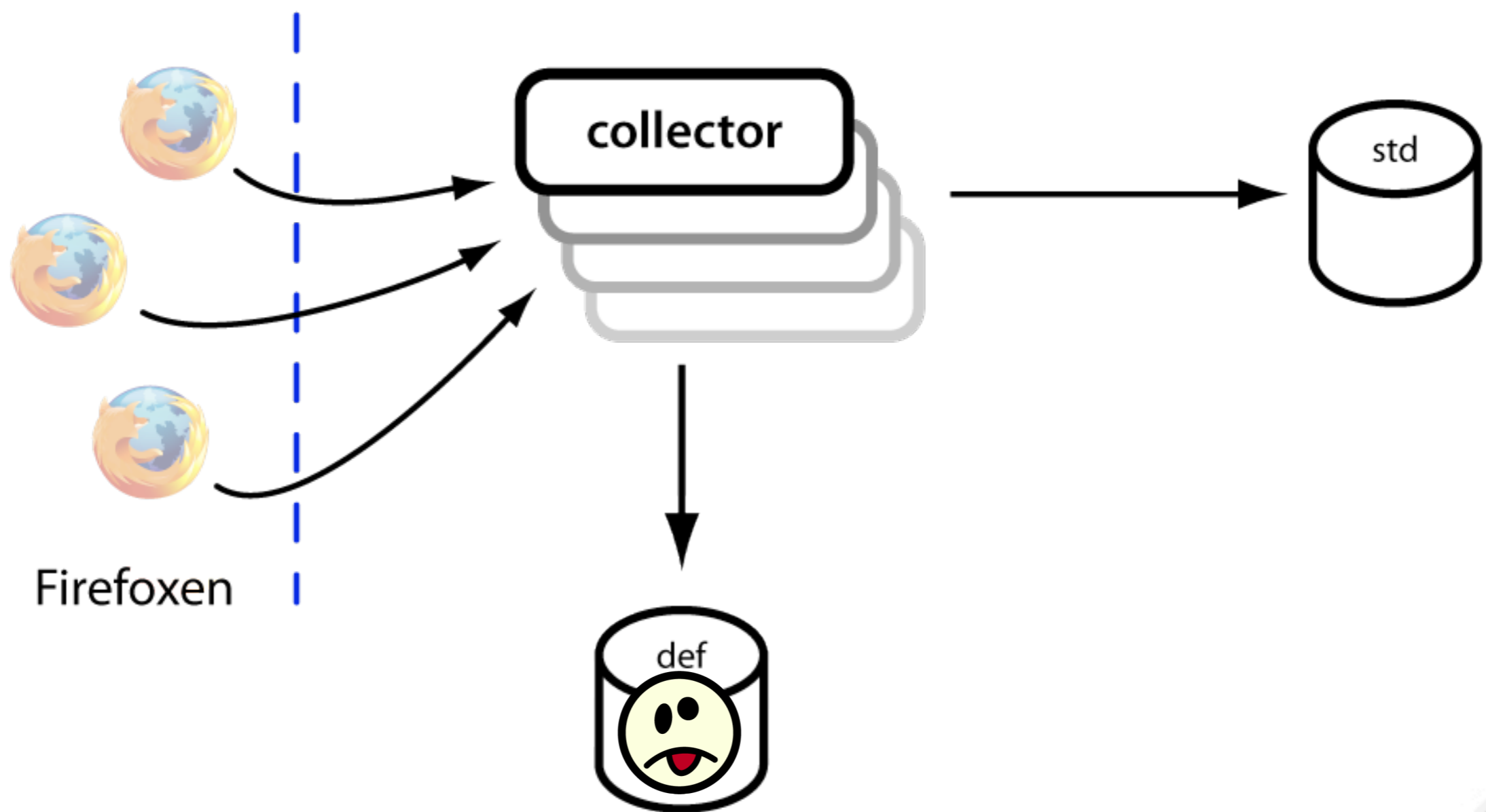
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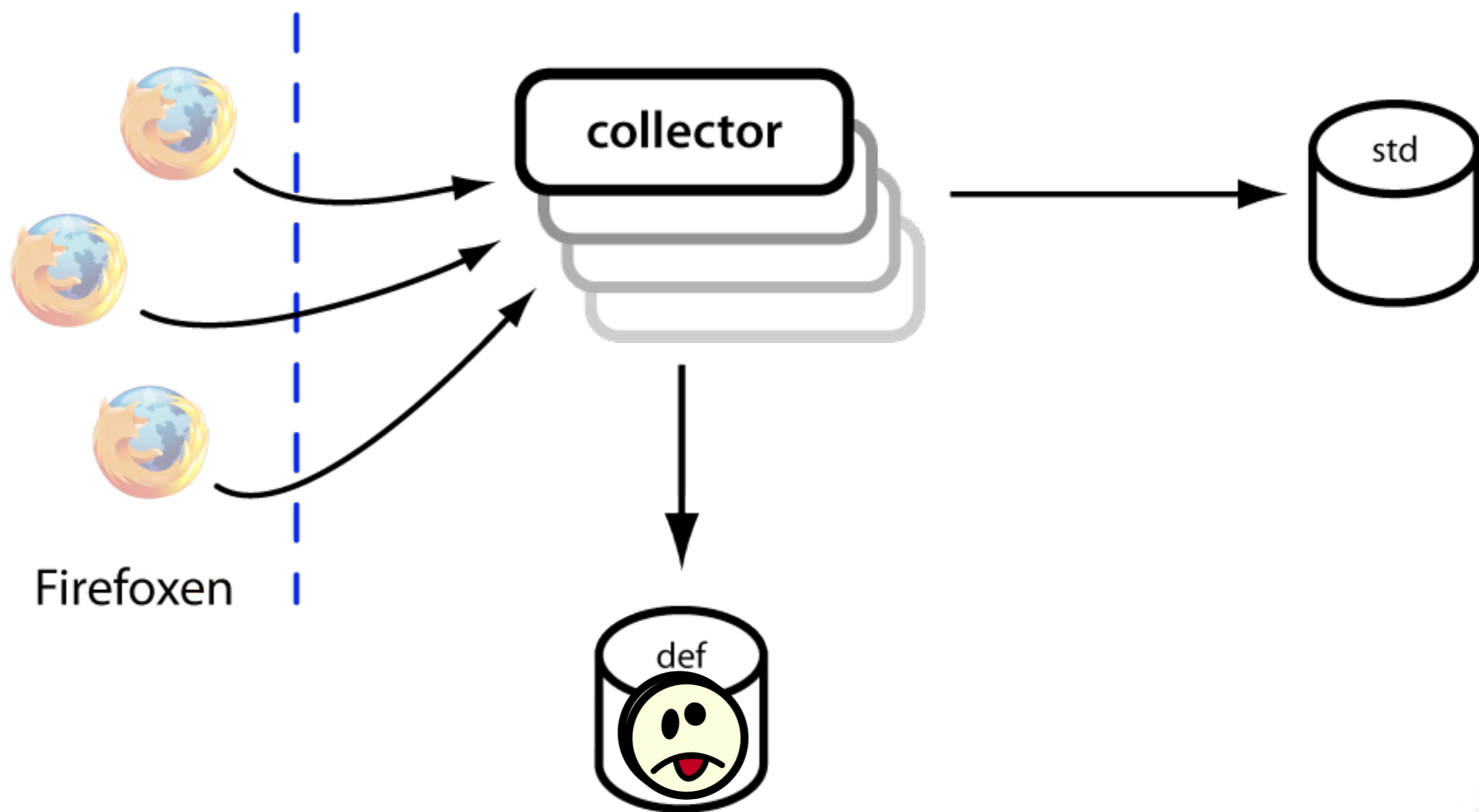
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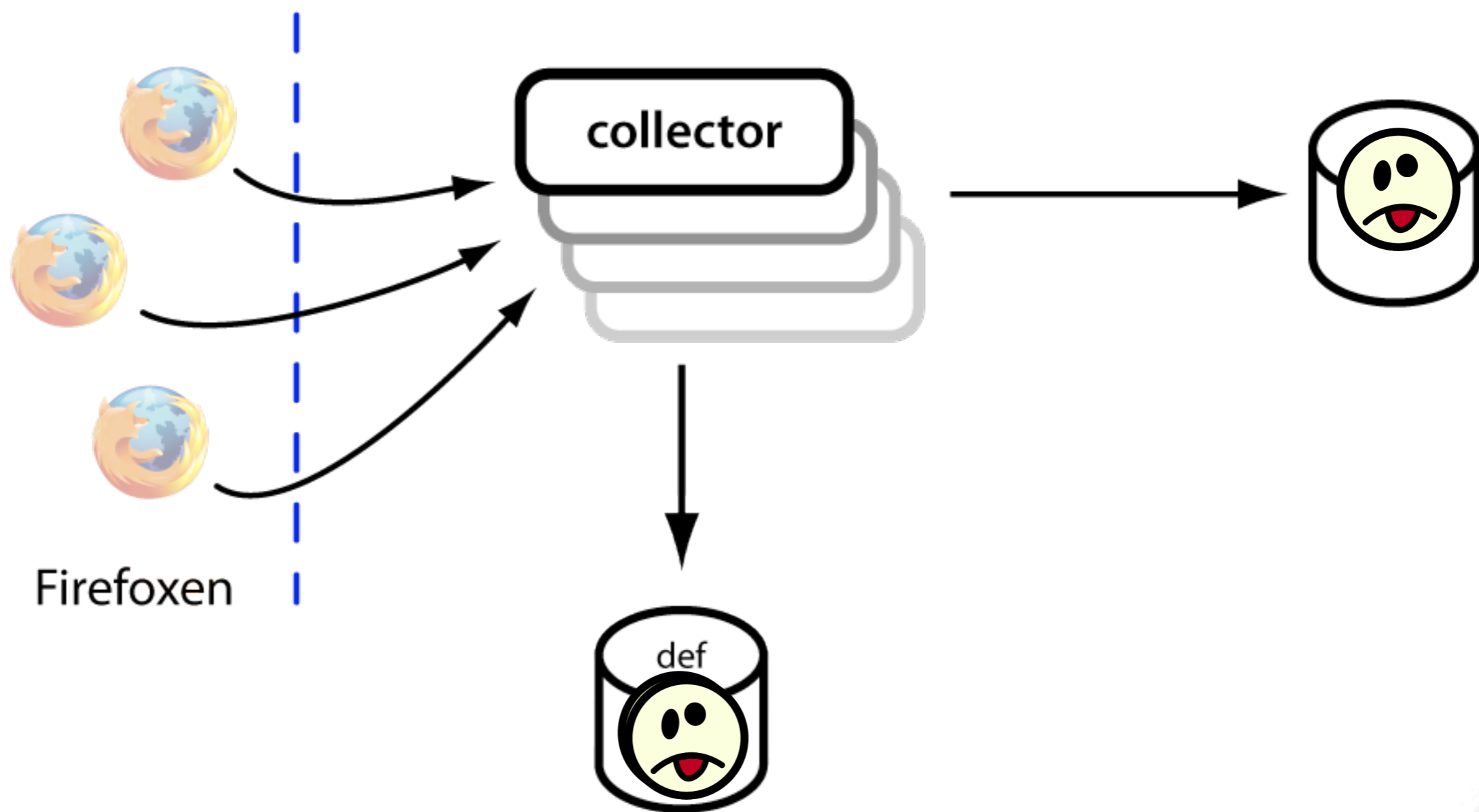
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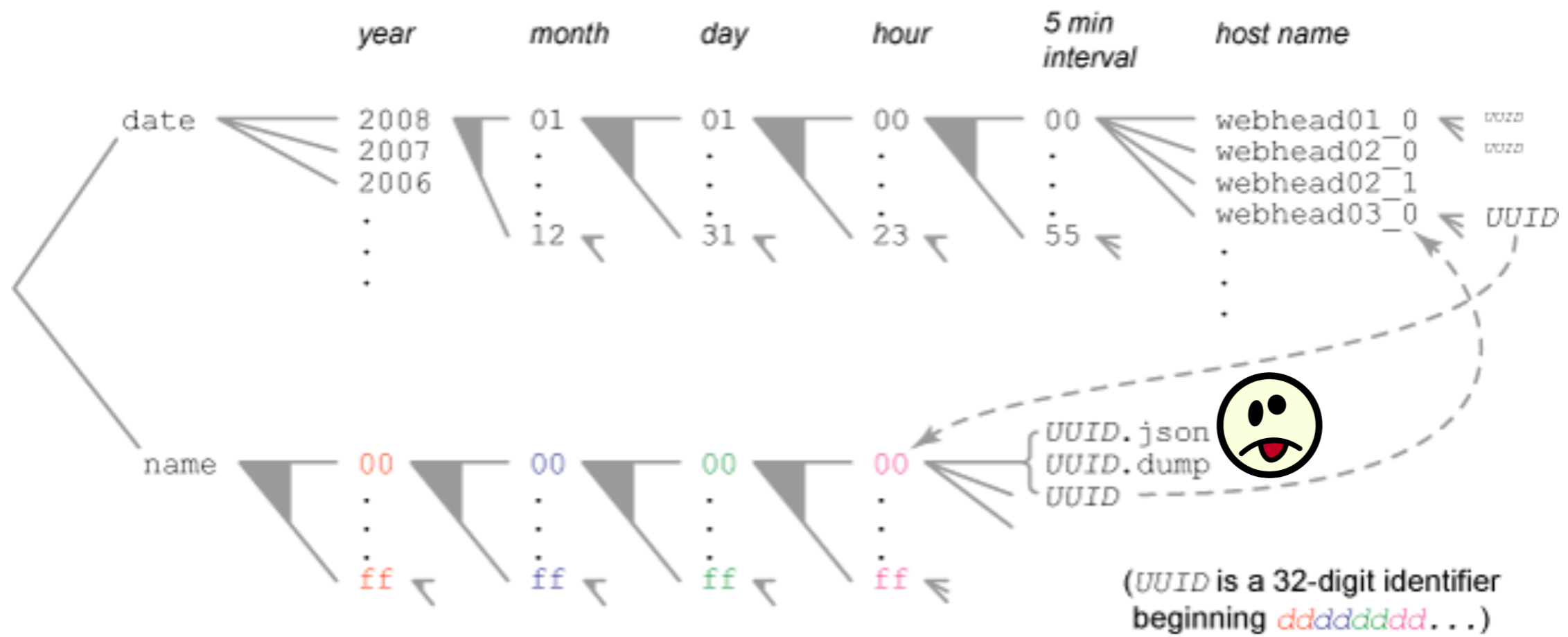
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File System Structure



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We use file system storage like a hierarchical database. We want to be able to look up a crash with out having to spend any time searching. With 2 million of these things, you can't just dump them all into one directory.

We use a radix scheme to save crashes by name. Say we have a file called "aabbcc.json"

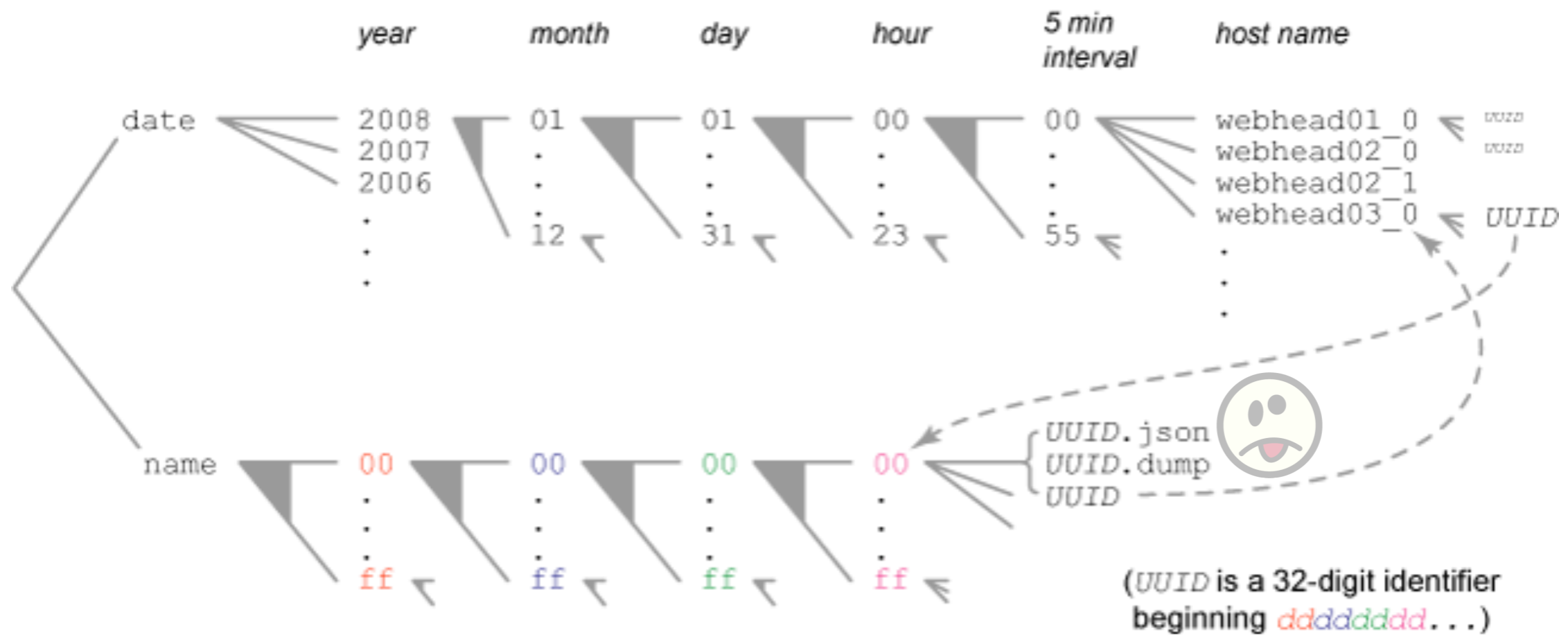
The "name" branch of this structure uses two characters at each directory level.

The "date" branch uses the same radix idea with datetimes. However, rather than having a data file at the leaf node, it has a symbolic link over to the where the data is stored in the name branch.

We can rapidly lookup crashes either by name or date, without wasting time having to search.

Back to our data flow...

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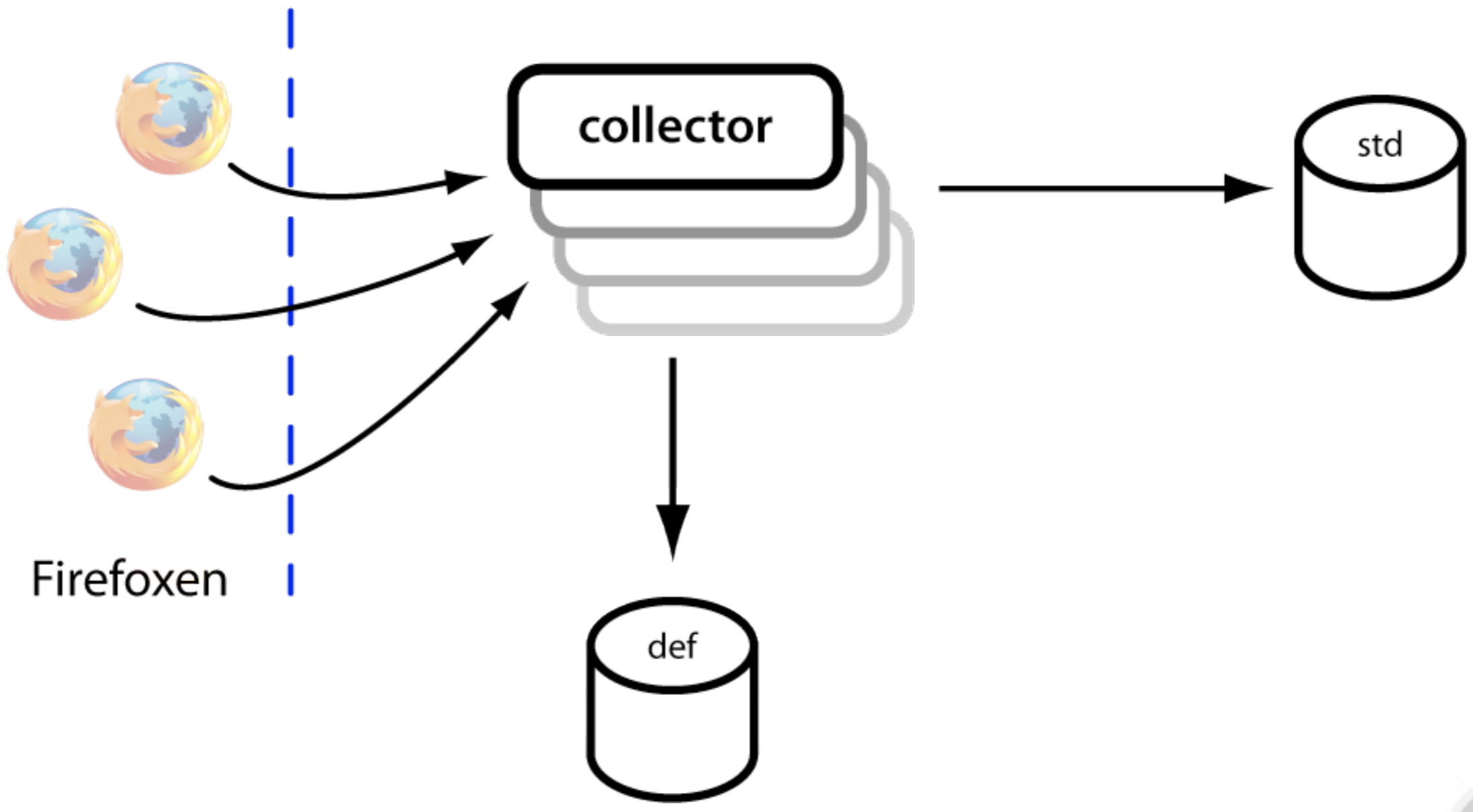
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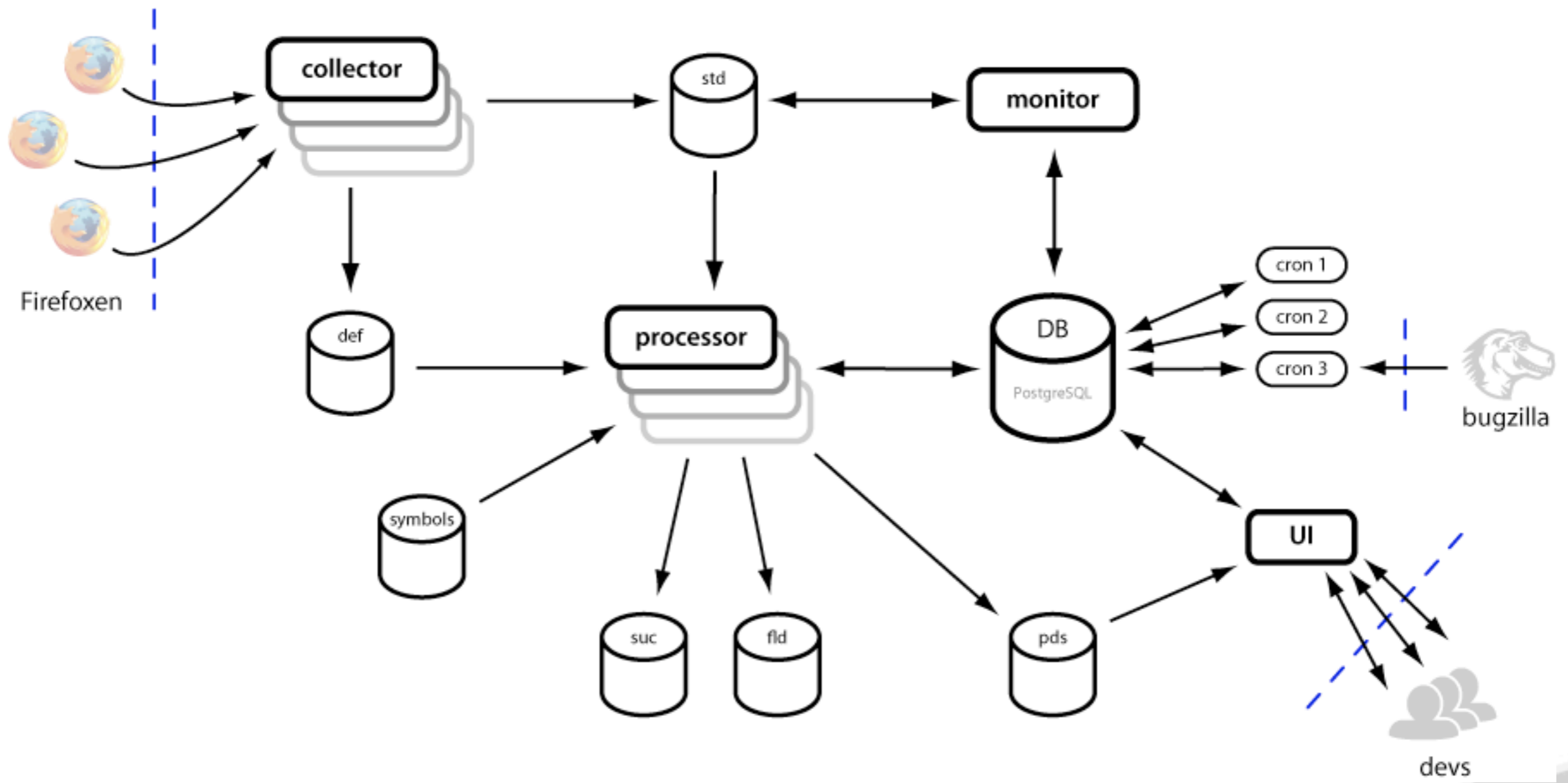
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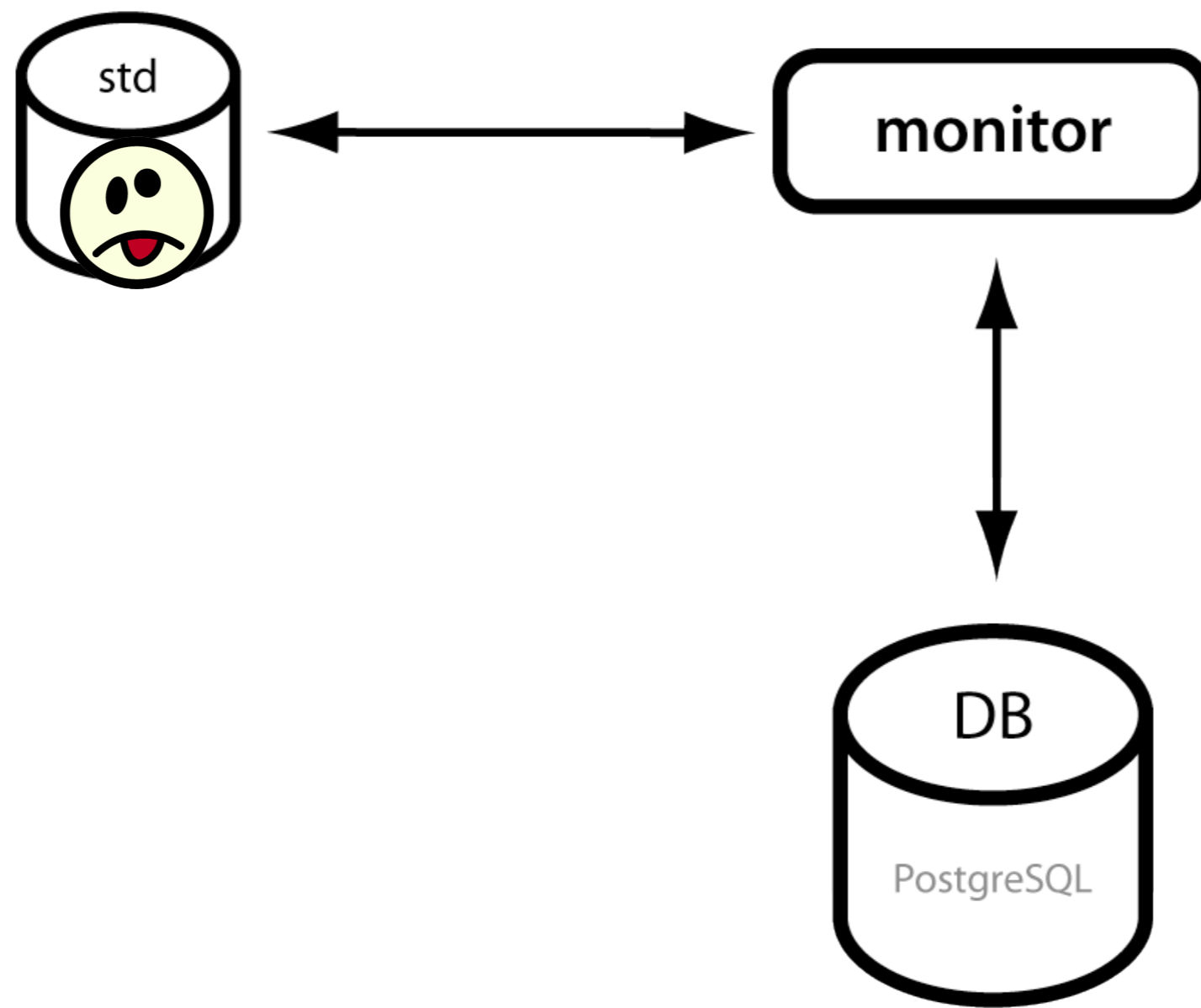
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Now we're going to look at Monitor, the ring master of this circus



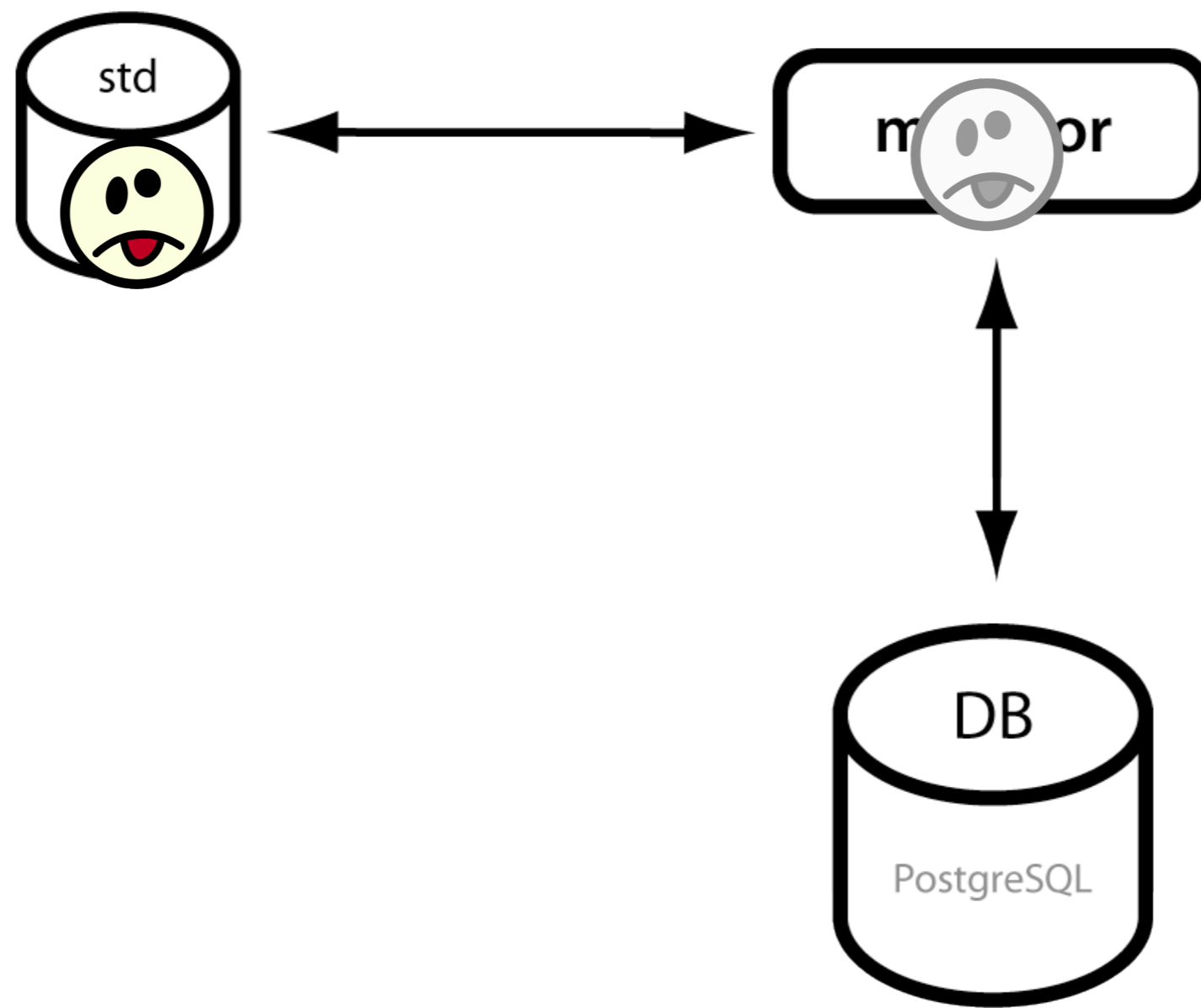
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We've got a crash waiting in "standard" storage. The monitor can detect that it's there by following the date directory branches of the file system.

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It doesn't actually read the crash data, it just notes its existence and saves the name in the database.

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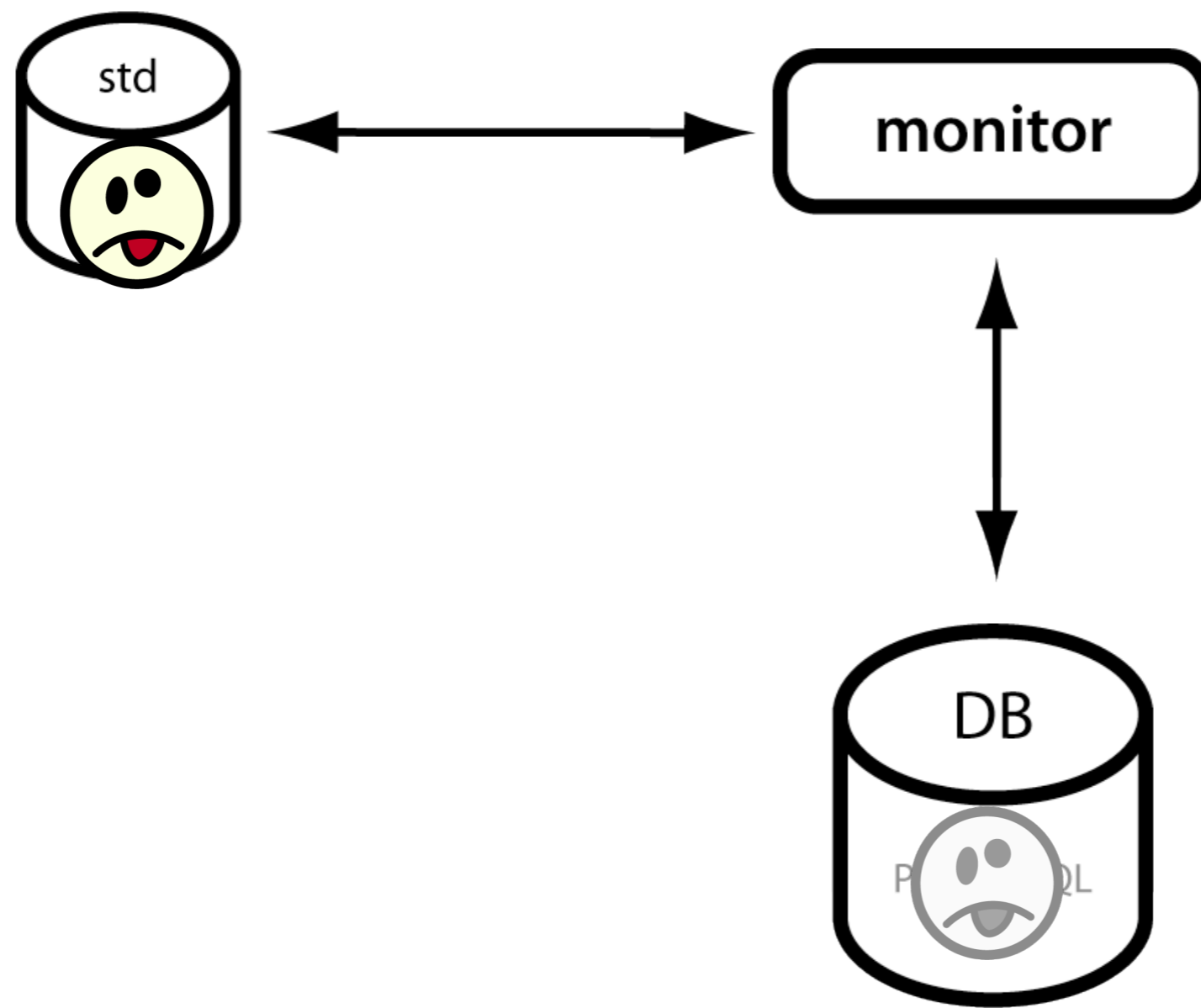
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Socorro Monitor

- Watches file system storage for new crashes
- Schedules crashes to be processed
- Watches the database for priority jobs
- Monitors the health of Processors
- Maintains and cleans file system storage



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We've already seen how monitor watches the file system storage and schedules crashes (at this point referred to as jobs) with processors.


It also watches a special table in the database for priority job requests. Crash processing is not generally a real time activity. Sometimes, we need to get the processed result quickly. Since Monitor is in charge of scheduling, it can let some crashes jump the queue for immediate responses. That's how jobs from that "deferred" storage can get processed.


Since it's in charge of scheduling, monitor also watches the health of the processors. If a processor becomes unresponsive and is not doing its work, the monitor has the power to take the processor's jobs away from it and hand them off to a more responsive processor.


Finally, monitor also is in charge of cleaning old files out of the file system storage. This task may be moved into a cron job in the future.


With all this stuff to do, it is not surprising that Monitor is a multithreaded application.

Process Control

jobs	
 id	serial
pathname	varchar (1024)
uuid	varchar (50)
owner	int4
priority	int4
queueddatetime	timestamp
startdatetime	timestamp
completeddatetime	timestamp
success	bool
message	text (2147483647)

processors	
 id	serial
name	varchar (255)
startdatetime	timestamp
lastseendatetime	timestamp

priorityjobs	
 uuid	varchar (255)

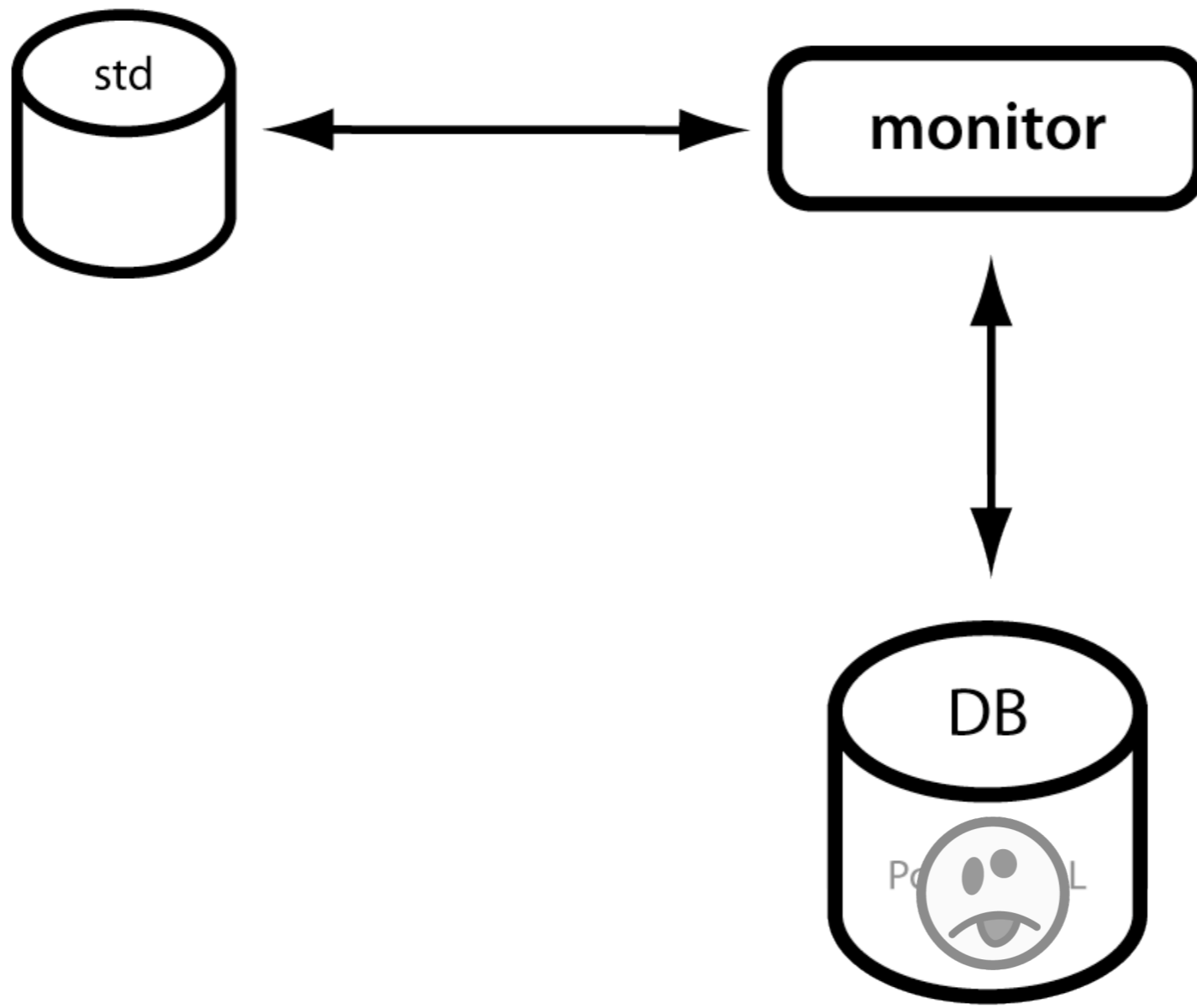
priority_jobs_XX	
 uuid	varchar (255)

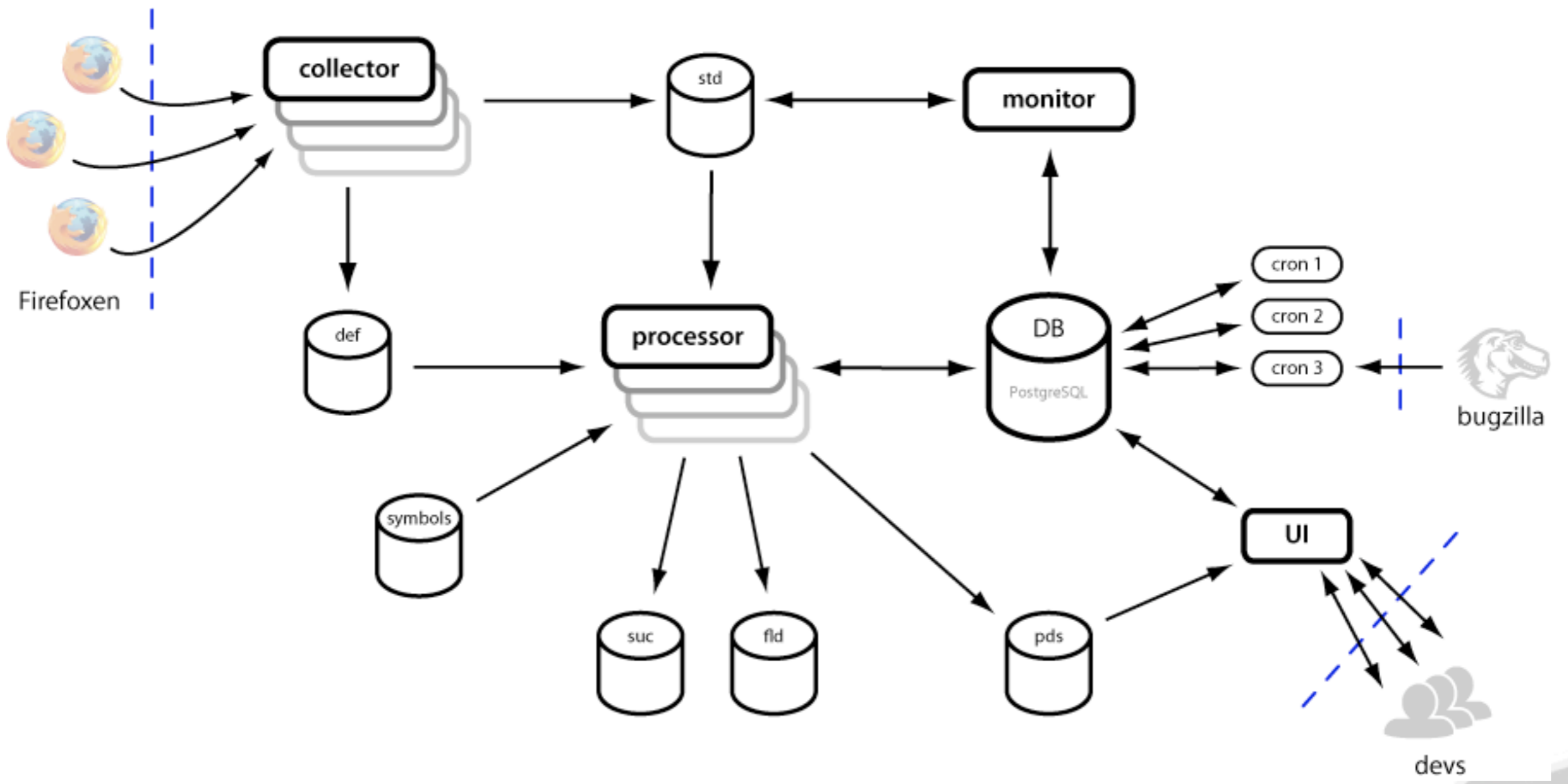
priority_jobs_21
priority_jobs_22
priority_jobs_23

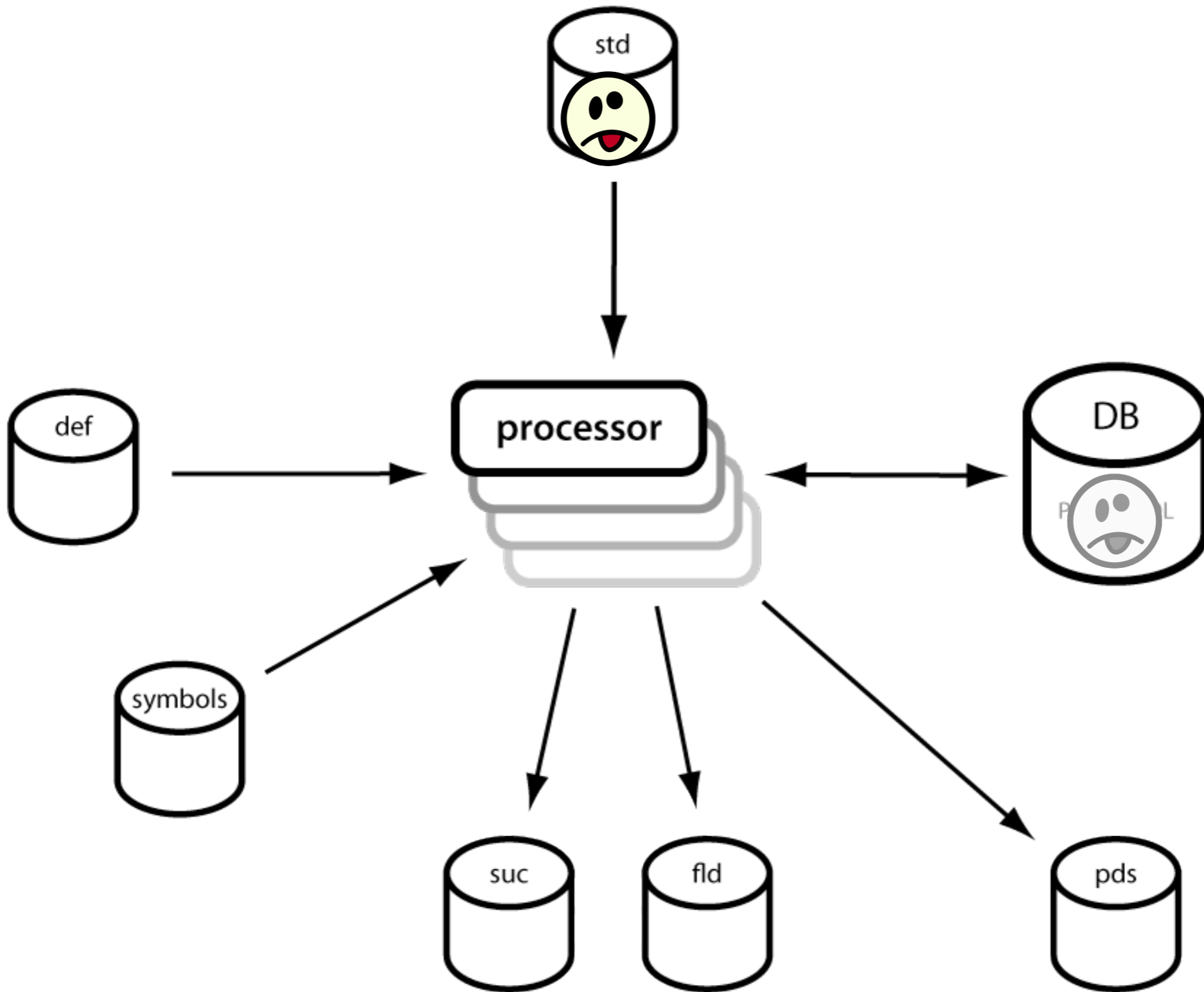


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In PostgreSQL, the Monitor uses these table for process control. Jobs are assigned to Processors by the Monitor.







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The processor grabs its next job from the queue and using the meta information, grabs the files to be processed from “standard” storage.

Once it has the crash dump, it invokes Google Breakpad’s `minidump_stackwalk` program to take the raw crash, reformat it with symbol table information and then save the results.

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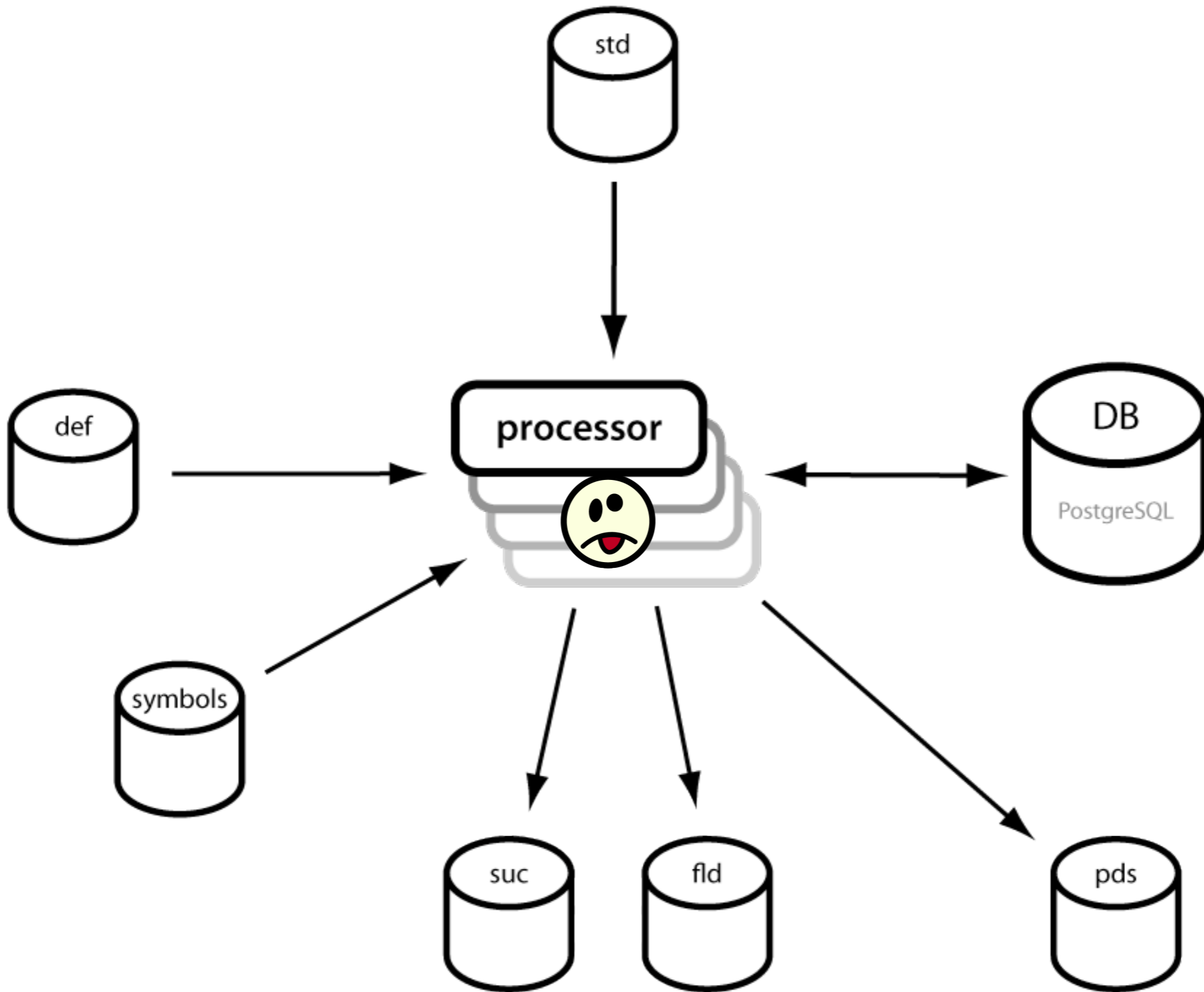
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The output of `minidump_stackwalk` is saved to processed dump storage. This will eventually be used by the UI.

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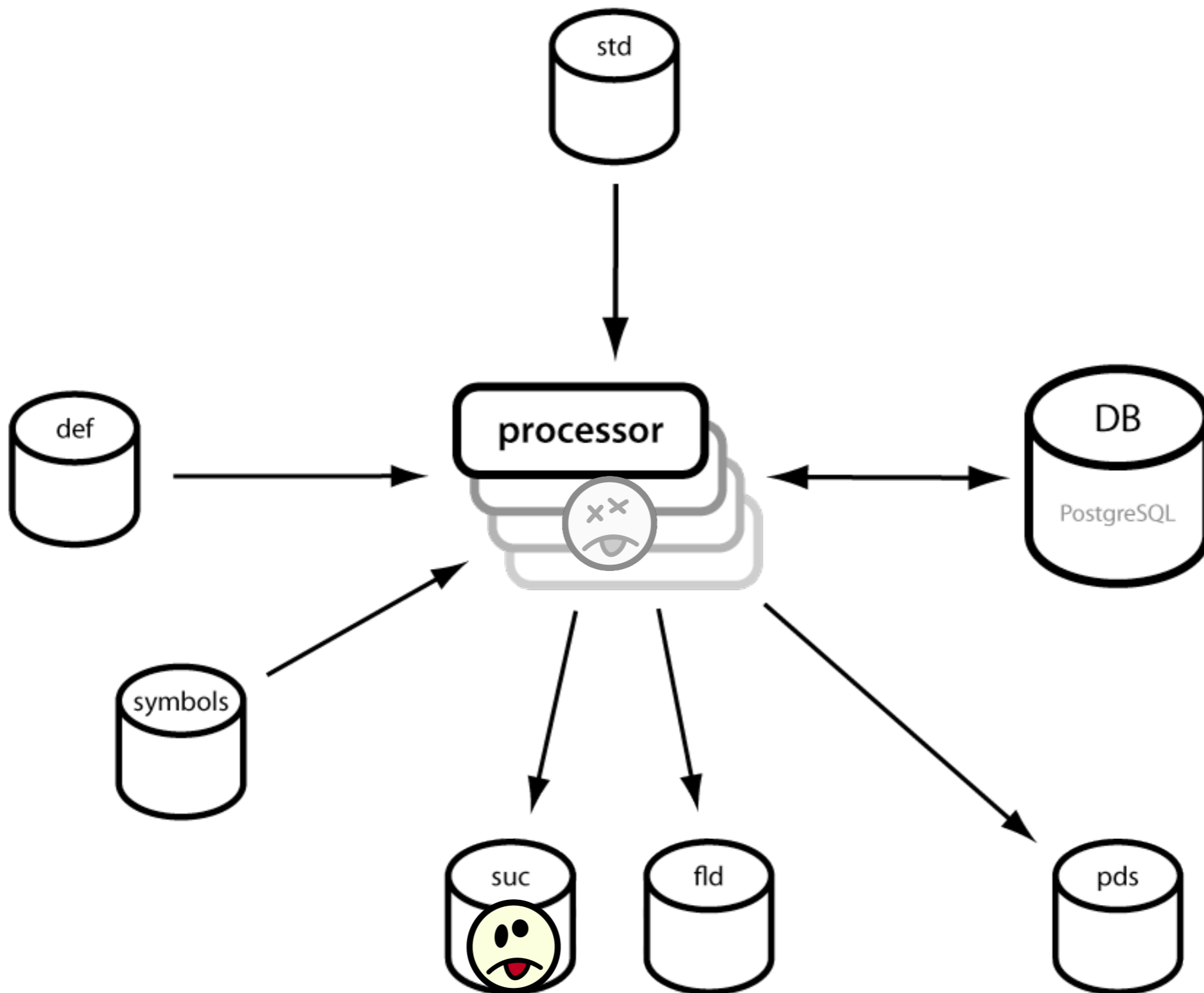
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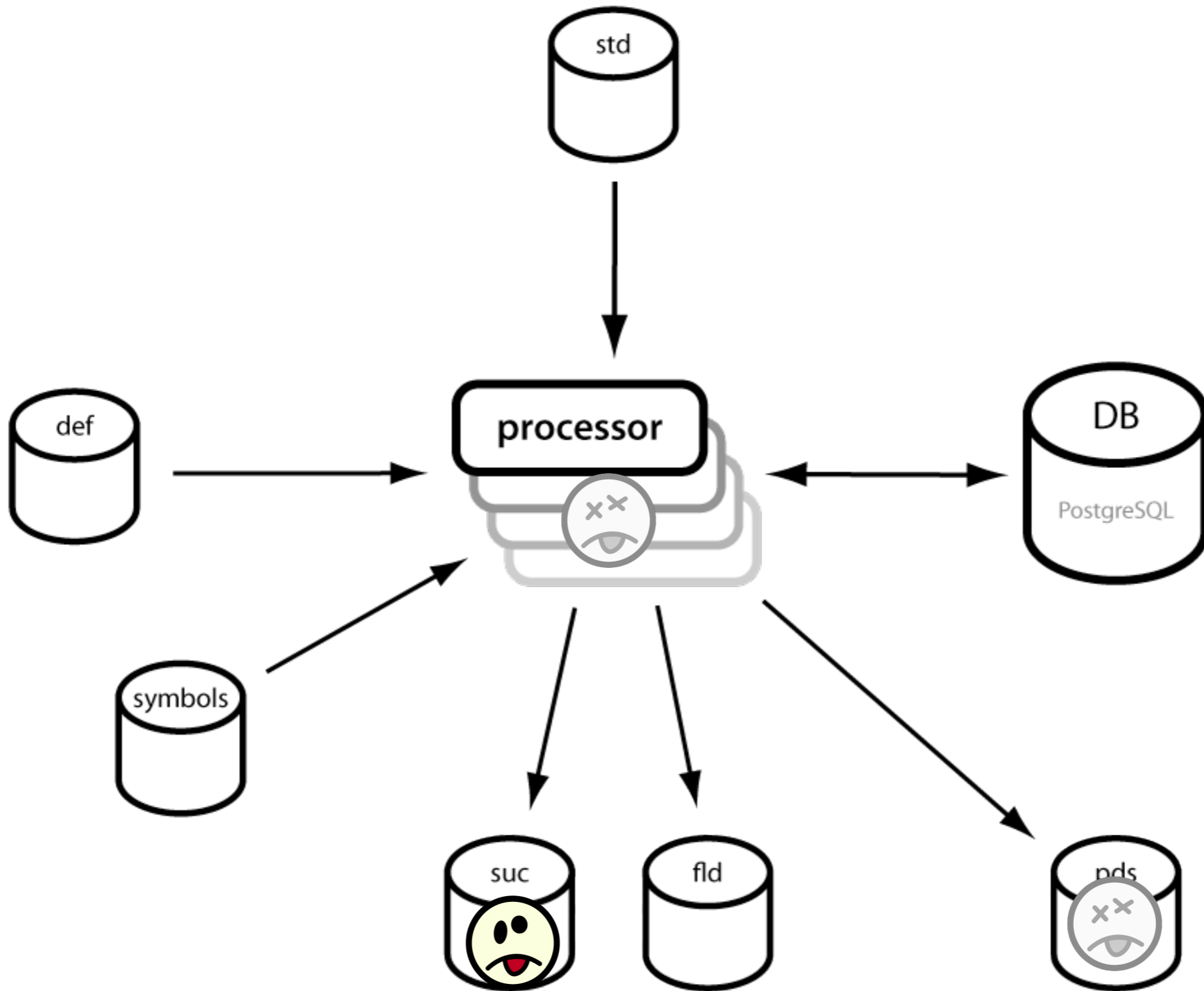
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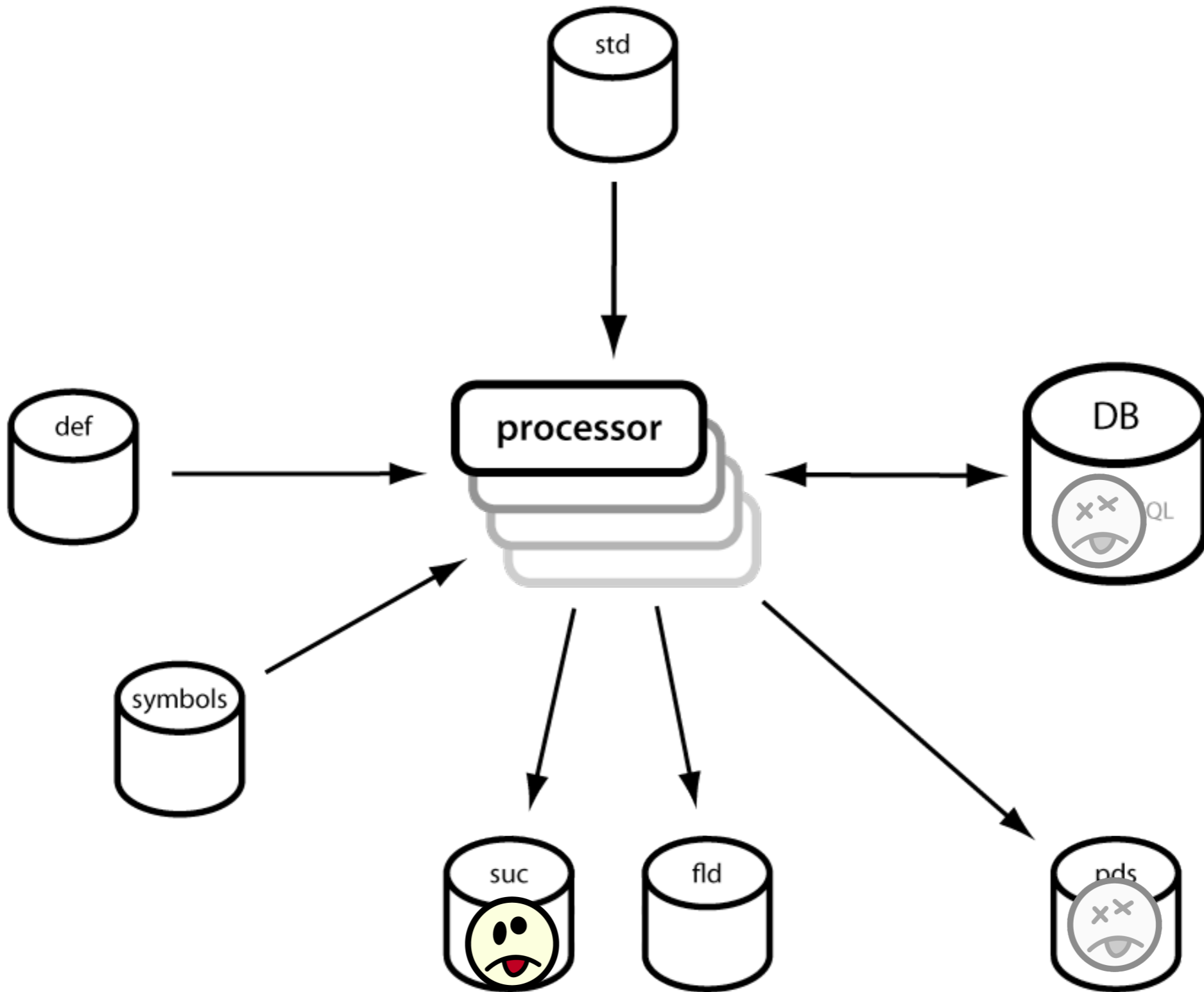
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Socorro Processor

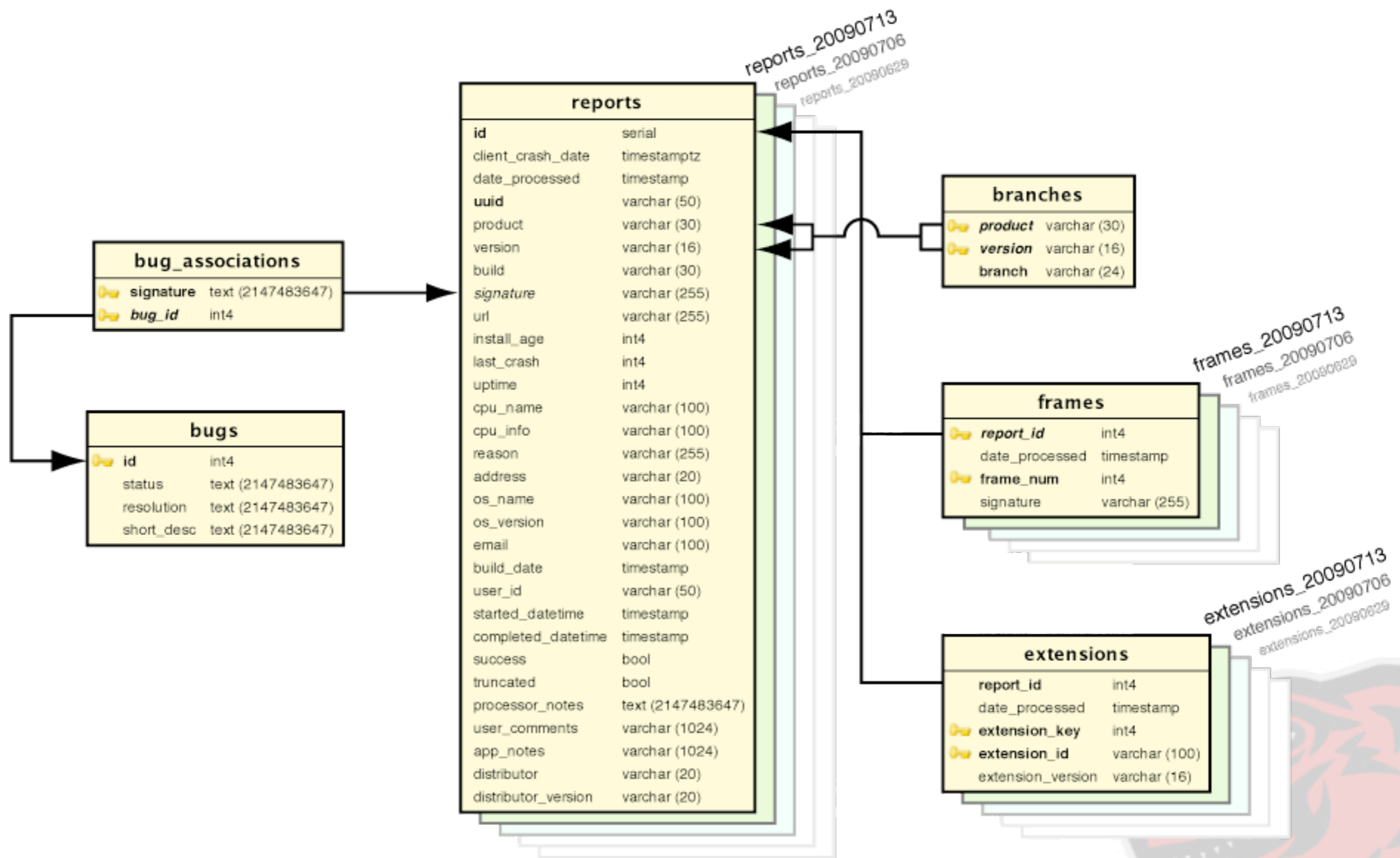
- Watches a job queue in the database
- for each job found, applies `minidump_stackwalk`
- saves originals in “success” or “failed” storage
- saves processed crash in “processed dump” storage
- saves parsed crash info in the database



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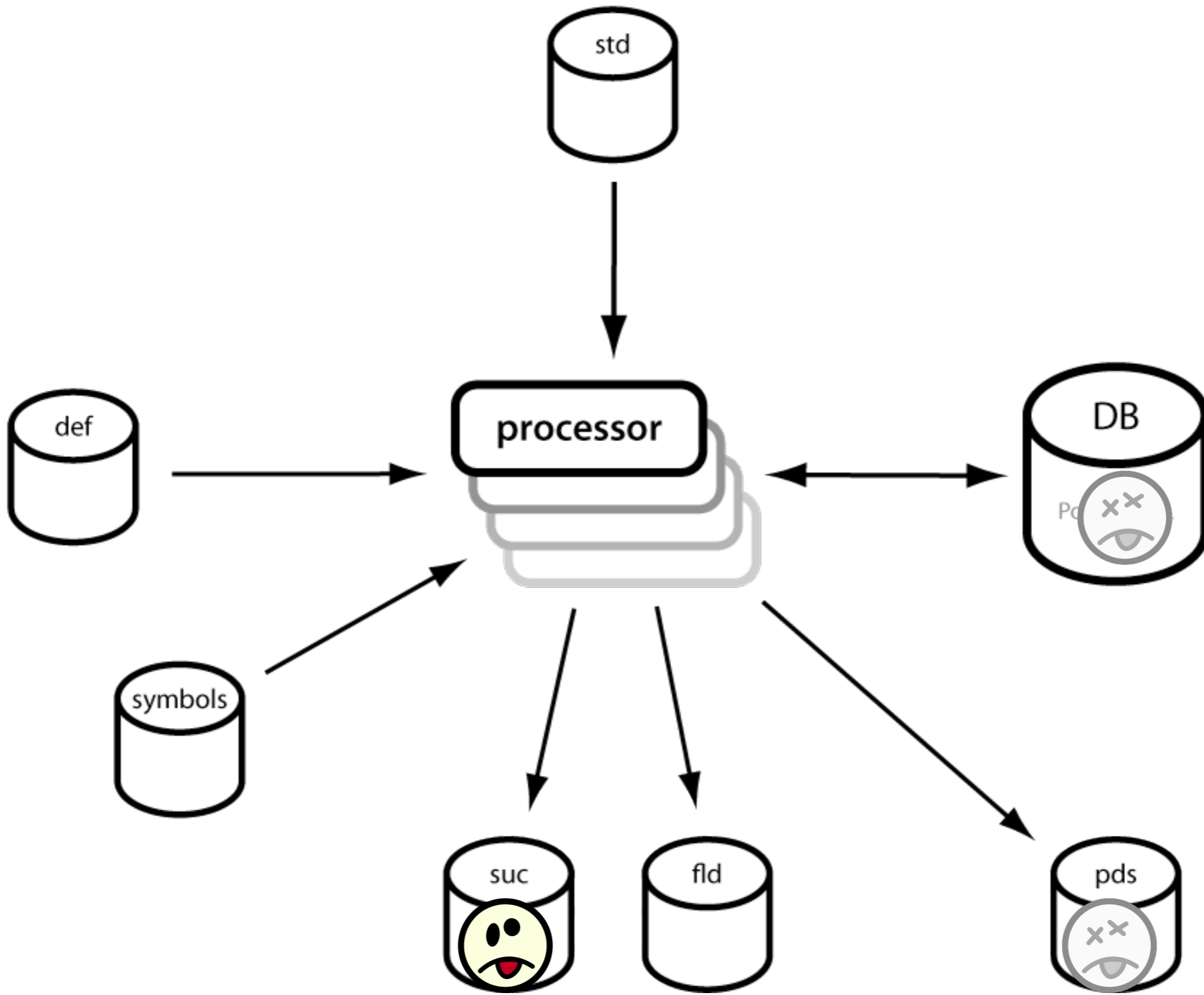
ok, we've seen how the processors watch the job queue and applies `minidump_stackwalk` and then dumps the results into a file system_and_ the database.

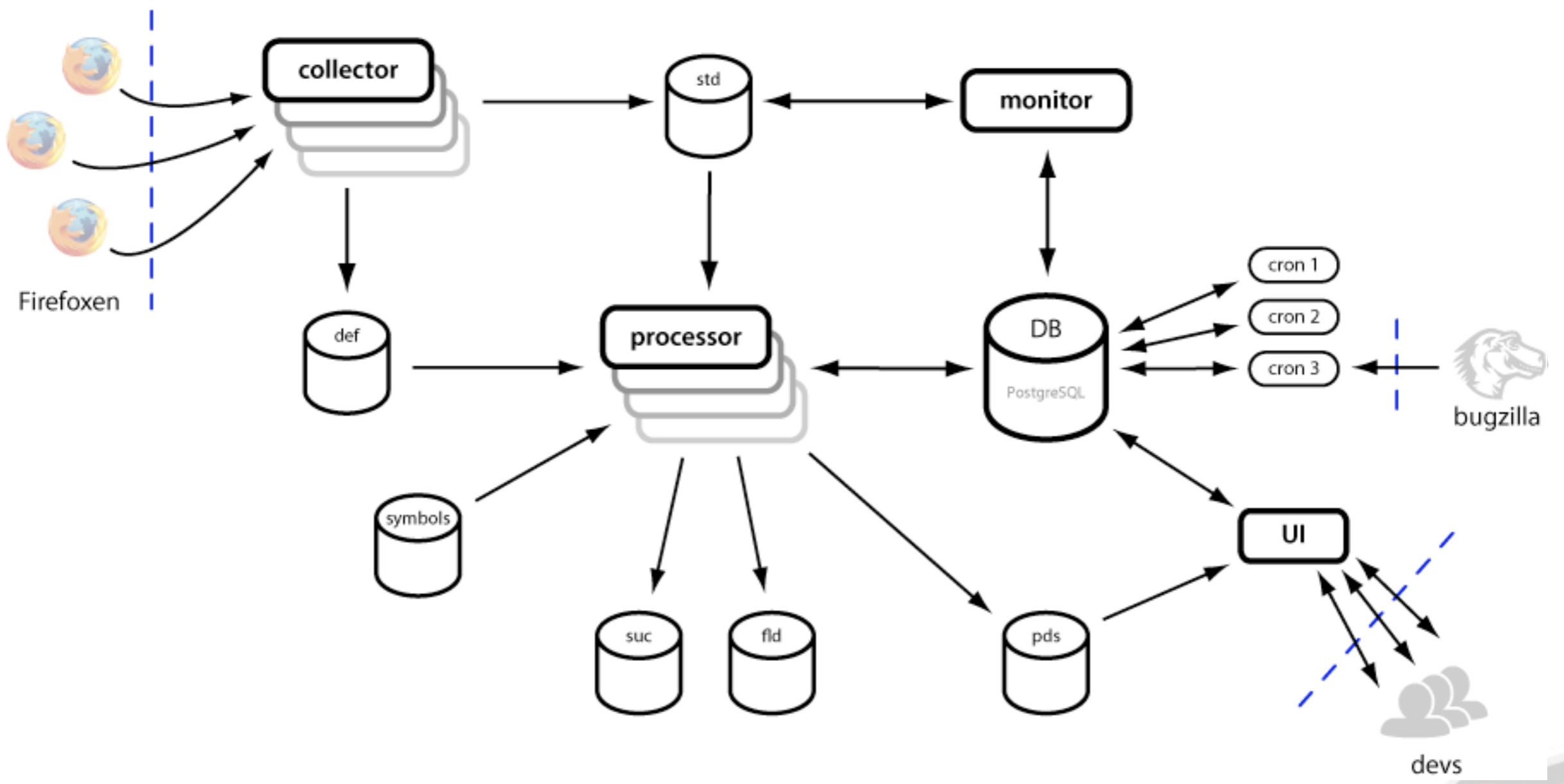
Database Crash Data



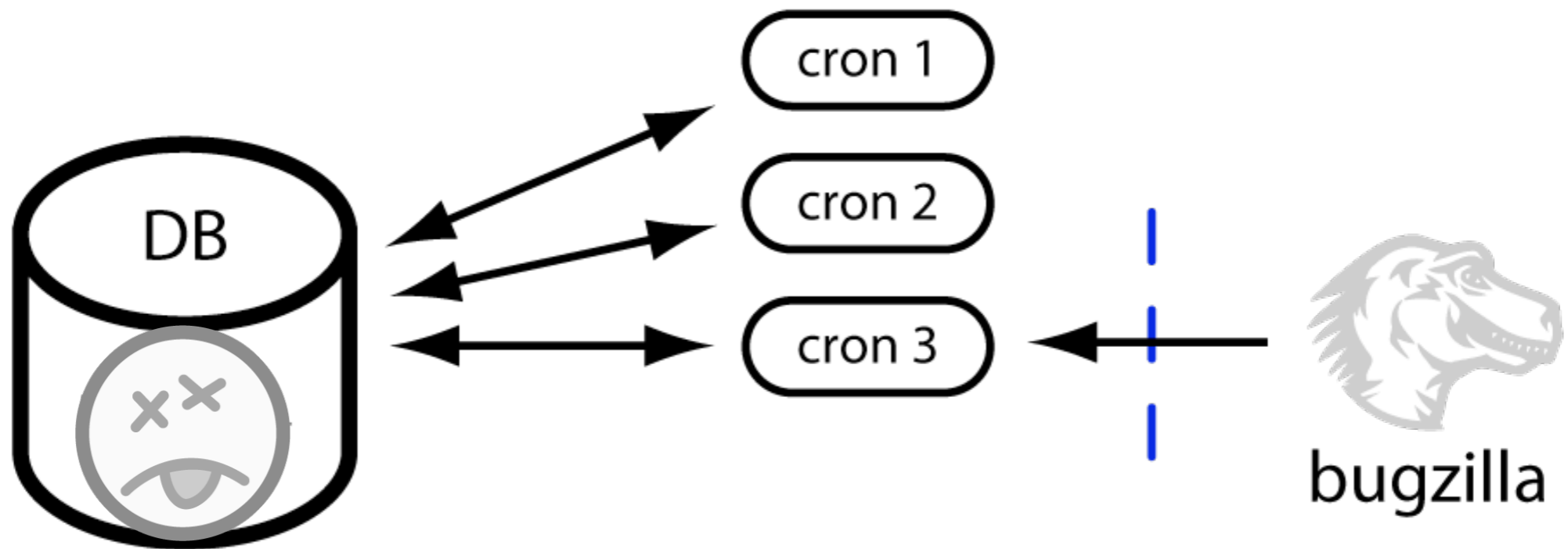
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The reports, frames and extensions tables are partitioned. For efficiency in the database, there are many instances of these tables each holding data from a range in time. Partitioning is implemented using PostgreSQL table inheritance.





Cron Jobs



Friday, July 24, 2009

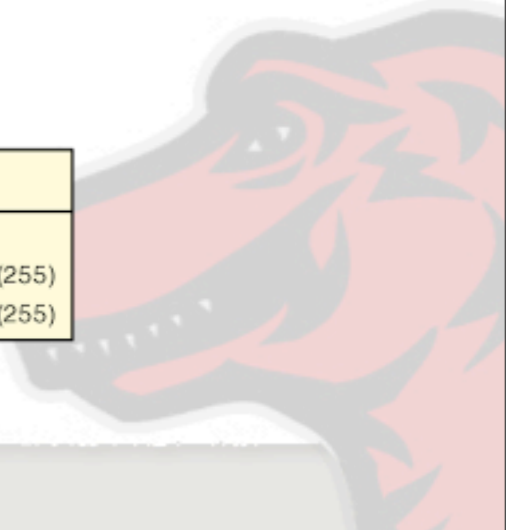
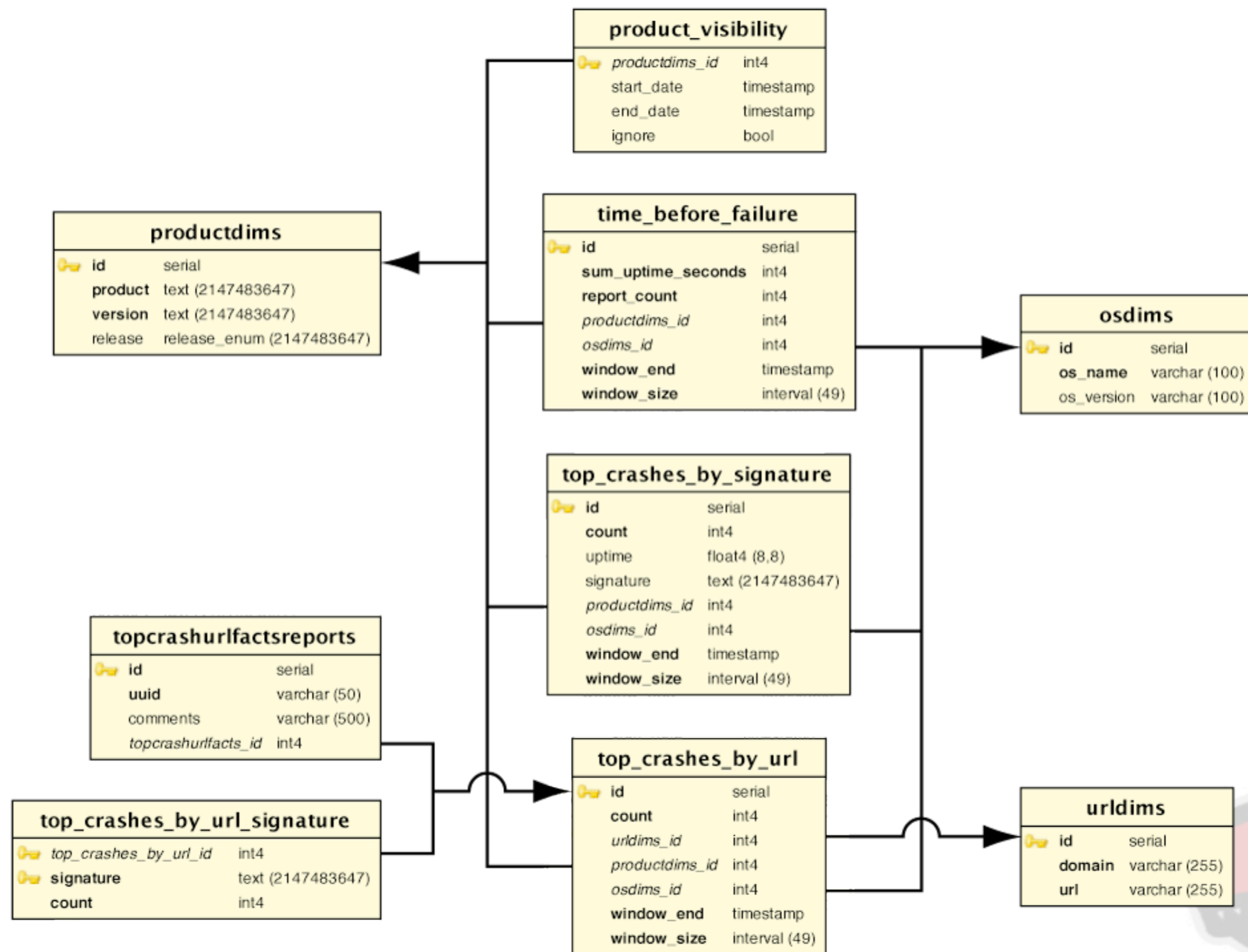
These are cluster of auxiliary applications that feed off the crash data in the database.

Cron Jobs

- mean time before failure
- top crasher by signature
- top crasher by url
- bugzilla associator
- file system cleaner



Data Aggregation Schema



Friday, July 24, 2009

These are the tables that support the “materialized views” of the crash data. These support getting statistical information out of the database more quickly than trying to regenerate it on demand.

Socorro UI (reporter)





mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Mozilla Crash Reports

Product

- All
- Camino
- Firefox
- SeaMonkey

Version:

- All

Operating System

- Windows
- Mac OS X
- Linux
- Solaris

Advanced Filters

Filter Crash Reports

Top Crashes By Signature

Camino 2.0b4pre	
Firefox 3.6a1pre	
1 JS_GetClass	217
2 _VEC_memzero	137
3 js3250.dll@0x3ae04	66
Full Report	
SeaMonkey 2.0a3pre	
Sunbird 1.0pre	
Thunderbird 3.0b4pre	

Top Crashes By Url

Firefox 3.6a1pre	
Full Report	
Thunderbird 3.1a1pre	

3 ways to play

- View Your Crash
- Search
- Trend Reports



View Your Crash

The screenshot shows a web browser window with the title 'Submitted Crash Reports'. The address bar contains 'about:crashes'. The main content area has a heading 'Submitted Crash Reports' and a 'Remove Reports' button. Below this is a table with two columns: 'Report ID' and 'Date Submitted'. The table lists 15 crash reports with their respective IDs and submission dates and times.

Report ID	Date Submitted
ad95cc92-acee-4e2f-afea-7ace32090608	6/8/09 8:25 PM
f75ed8de-bacf-4aad-adb5-11e792090608	6/8/09 8:23 PM
8f6c833a-24bc-41fb-8aa0-42c1f2090608	6/8/09 8:13 PM
efb2d4fe-f98e-4a46-93f4-69eb62090608	6/8/09 8:04 PM
9fddf8dd-cc9e-4ca1-9aab-6644f2090507	5/7/09 7:56 PM
9abfd0fa-7f0d-4fe3-92d3-c06af2090421	4/21/09 8:19 AM
fe88a8b6-4f0c-4000-b793-3583c2090319	3/19/09 2:48 PM
d92ebf79-9858-450d-9868-0fe042090211	2/11/09 9:19 AM
a67d53d1-2674-42b5-9f37-029132090211	2/11/09 8:51 AM
c7fe5394-a34d-4f4c-9409-4c66f2090209	2/9/09 2:22 PM
36e53db2-c93b-42a0-b59d-817322090209	2/9/09 2:18 PM
940db996-19bd-4a63-aa86-4e5ac2081229	12/29/08 3:02 PM
67e34d92-1203-4bb7-855b-ed5920081119	11/19/08 10:31 AM
e191213d-f39d-4ac0-bbe5-7f5f20081119	11/19/08 10:30 AM



mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Firefox 3.6a1pre Crash Report [@_VEC_memzero]

Get Help

ID: d425189f-148b-461c-ba3d-c6c0b2090721

Signature: _VEC_memzero

Details Modules Raw Dump

Signature	_VEC_memzero
UUID	d425189f-148b-461c-ba3d-c6c0b2090721
Time	2009-07-21 22:59:00.57631
Uptime	2406
Last Crash	264597 seconds before submission
Product	Firefox
Version	3.6a1pre
Build ID	20090721044139
Branch	1.9.2
OS	Windows NT
OS Version	6.1.7100
CPU	x86
CPU Info	GenuineIntel family 6 model 23 stepping 10
Crash Reason	EXCEPTION_ACCESS_VIOLATION
Crash Address	0x4fb03de
User Comments	Was just closing a tab but the entirety of Minefield seem to close with it lol.
Processor Notes	

Related Bugs

Firefox 3.6a1pre Crash Report [@_VEC_memzero]

[Get Help](#)

ID: d425189f-148b-461c-ba3d-c6c0b2090721

Signature: _VEC_memzero

[Details](#) [Modules](#) [Raw Dump](#)

Signature	_VEC_memzero
UUID	d425189f-148b-461c-ba3d-c6c0b2090721
Time	2009-07-21 22:59:00.57631
Uptime	2406
Last Crash	264597 seconds before submission
Product	Firefox
Version	3.6a1pre
Build ID	20090721044139
Branch	1.9.2
OS	Windows NT
OS Version	6.1.7100
CPU	x86
CPU Info	GenuineIntel family 6 model 23 stepping 10
Crash Reason	EXCEPTION_ACCESS_VIOLATION
Crash Address	0x4fb03de
User Comments	Was just closing a tab but the entirety of Minefield seem to close with it lol.
Processor Notes	

Related Bugs

DUPLICATE

[501322](#) RESOLVED Crash [@_VEC_memzero] during shutdown[500675](#) RESOLVED Thunderbird 3.1a1pre Crash [@_VEC_memzero]

Crashing Thread

Done

Crashing Thread

Frame	Module	Signature [Expand]	Source
0	mozcrt19.dll	_VEC_memzero	
1	xul.dll	xul.dll@0x3e34ba	

[Show/hide other threads](#)

Thread 1

Frame	Module	Signature [Expand]	Source
0	ntdll.dll	ntdll.dll@0x1f861	
1	kernel32.dll	kernel32.dll@0x11168	
2	kernel32.dll	kernel32.dll@0x1118f	
3	nspr4.dll	_PR_MD_WAIT_CV	nsprpub/pr/src/md/windows/w95cv.c:280
4	nspr4.dll	_PR_WaitCondVar	nsprpub/pr/src/threads/combined/prucv.c:204
5	nspr4.dll	PR_WaitCondVar	nsprpub/pr/src/threads/combined/prucv.c:547
6	xul.dll	TimerThread::Run	xpcom/threads/TimerThread.cpp:344
7	xul.dll	nsThread::ProcessNextEvent	xpcom/threads/nsThread.cpp:527
8	xul.dll	NS_ProcessNextEvent_P	obj-firefox/xpcom/build/nsThreadUtils.cpp:230
9	xul.dll	nsThread::ThreadFunc	xpcom/threads/nsThread.cpp:254
10	nspr4.dll	_PR_NativeRunThread	nsprpub/pr/src/threads/combined/pruthr.c:426
11	nspr4.dll	pr_root	nsprpub/pr/src/md/windows/w95thred.c:122
12	mozcrt19.dll	_callthreadstartex	obj-firefox/memory/jemalloc/crtsrc/threadex.c:348
13	mozcrt19.dll	_threadstartex	obj-firefox/memory/jemalloc/crtsrc/threadex.c:326
14	kernel32.dll	kernel32.dll@0x13f38	
15	ntdll.dll	ntdll.dll@0x50408	
16	ntdll.dll	ntdll.dll@0x503db	

Thread 2

Frame	Module	Signature [Expand]	Source
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Done


```
benjamin@15272 280 rv = WaitForSingleObject(thred->md.blocked_sema, msec);
benjamin@15272 281
benjamin@15272 282 EnterCriticalSection(&(lock->mutex));
benjamin@15272 283
benjamin@15272 284 PR_ASSERT(rv != WAIT_ABANDONED);
benjamin@15272 285 PR_ASSERT(rv != WAIT_FAILED);
benjamin@15272 286 PR_ASSERT(rv != WAIT_OBJECT_0 || thred->md.inCVWaitQueue == PR_FALSE);
benjamin@15272 287
benjamin@15272 288 if (rv == WAIT_TIMEOUT) {
benjamin@15272 289     if (thred->md.inCVWaitQueue) {
benjamin@15272 290         PR_ASSERT((cv->waitTail != NULL && cv->waitHead != NULL)
benjamin@15272 291                 || (cv->waitTail == NULL && cv->waitHead == NULL));
benjamin@15272 292         cv->nwait -= 1;
benjamin@15272 293         thred->md.inCVWaitQueue = PR_FALSE;
benjamin@15272 294         if (cv->waitHead == thred) {
benjamin@15272 295             cv->waitHead = thred->md.next;
benjamin@15272 296             if (cv->waitHead == NULL) {
benjamin@15272 297                 cv->waitTail = NULL;
benjamin@15272 298             } else {
benjamin@15272 299                 cv->waitHead->md.prev = NULL;
benjamin@15272 300             }
benjamin@15272 301         } else {
benjamin@15272 302             PR_ASSERT(thred->md.prev != NULL);
benjamin@15272 303             thred->md.prev->md.next = thred->md.next;
benjamin@15272 304             if (thred->md.next != NULL) {
benjamin@15272 305                 thred->md.next->md.prev = thred->md.prev;
benjamin@15272 306             } else {
benjamin@15272 307                 PR_ASSERT(cv->waitTail == thred);
benjamin@15272 308                 cv->waitTail = thred->md.prev;
benjamin@15272 309             }
benjamin@15272 310         }
benjamin@15272 311         thred->md.next = thred->md.prev = NULL;
benjamin@15272 312     } else {
benjamin@15272 313         /*
benjamin@15272 314         * This thread must have been notified, but the
benjamin@15272 315         * ReleaseSemaphore call happens after WaitForSingleObject
benjamin@15272 316         * times out. Wait on the semaphore again to make it
```

Done



mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Firefox 3.6a1pre Crash Report [@_VEC_memzero]

Get Help

ID: d425189f-148b-461c-ba3d-c6c0b2090721

Signature: _VEC_memzero

Details Modules Raw Dump

Filename	Version	Debug Identifier	Debug Filename
smime3.dll	3.12.4.0	FD441C024E3B44D9B316836A69033F051	smime3.pdb
nssutil3.dll	3.12.4.0	189F37A165644A9E95CCD1DB70F5C73E1	nssutil3.pdb
plc4.dll	4.8.0.0	70561011889C4F5C950AE5880573CF741	plc4.pdb
plds4.dll	4.8.0.0	5A4E10745154493ABF94CB4FA54FBDCE1	plds4.pdb
ssl3.dll	3.12.4.0	D3A149E8977943998BCB8092D181227C1	ssl3.pdb
nss3.dll	3.12.4.0	75A3B3905D7B4E1CAD4409F339593E5A1	nss3.pdb
firefox.exe	1.9.2.3489	88A8AD54BE1048D2B616A14F6607426B2	firefox.pdb
softokn3.dll	3.12.4.0	43619D2FD8AC43F29B2A4BA64563887C1	softokn3.pdb
nssdbm3.dll	3.12.4.0	4F3F17935848439481CAE62B85DDCD7D1	nssdbm3.pdb
freebl3.dll	3.12.4.0	84A3018DD14B484297AF38972B5373751	freebl3.pdb
nssckbi.dll	1.75.0.0	731BD47F47C344C69BE090C4997F63961	nssckbi.pdb
nspr4.dll	4.8.0.0	E327C2DB03D94E198CCCB056A65268EC1	nspr4.pdb
xul.dll	1.9.2.3489	B9018363477E4AC9962D06989BFFDFEC2	xul.pdb
NPSWF32.dll	10.0.2.54	E214D1CB28F545C9A386B7554CD5410F1	NPSWF32.pdb
schannel.dll	6.1.7100.0	435BA528322D4EC98BA29394DB32A30D2	schannel.pdb
midimap.dll	6.1.7100.0	A8C2774CC58D4A9099656AE1281E7AC72	midimap.pdb
msacm32.drv	6.1.7100.0	625BBC09A8CD4328A6531070FAC864FA1	msacm32.pdb
dbghelp.dll	6.1.7100.0	79B3E2040AE54E7D9B23FFA4046DE14E2	dbghelp.pdb
AudioSes.dll	6.1.7100.0	C68AD44DD0514B3984501693A7036CF22	AudioSes.pdb

Done



mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Firefox 3.6a1pre Crash Report [@_VEC_memzero]

[Get Help](#)

ID: d425189f-148b-461c-ba3d-c6c0b2090721

Signature: _VEC_memzero

Details Modules Raw Dump

```
OS|Windows NT|6.1.7100
CPU|x86|GenuineIntel family 6 model 23 stepping 10|2
Crash|EXCEPTION_ACCESS_VIOLATION|0x4fb03de|0
Module|smime3.dll|3.12.4.0|smime3.pdb|FD441C024E3B44D9B316836A69033F051|0x00020000|0x00037fff|1
Module|nssutil3.dll|3.12.4.0|nssutil3.pdb|189F37A165644A9E95CCD1DB70F5C73E1|0x000f0000|0x00103fff|0
Module|plc4.dll|4.8.0.0|plc4.pdb|70561011889C4F5C950AE5880573CF741|0x00110000|0x00116fff|0
Module|plds4.dll|4.8.0.0|plds4.pdb|5A4E10745154493ABF94CB4FA54FBDCE1|0x00120000|0x00126fff|0
Module|ssl3.dll|3.12.4.0|ssl3.pdb|D3A149E8977943998BCB8092D181227C1|0x00130000|0x0014ffff|0
Module|nss3.dll|3.12.4.0|nss3.pdb|75A3B3905D7B4E1CAD4409F339593E5A1|0x00200000|0x0029afff|0
Module|firefox.exe|1.9.2.3489|firefox.pdb|88A8AD54BE1048D2B616A14F6607426B2|0x00ec0000|0x00ed6fff|0
Module|softokn3.dll|3.12.4.0|softokn3.pdb|43619D2FD8AC43F29B2A4BA64563887C1|0x02430000|0x02455fff|0
Module|nssdbm3.dll|3.12.4.0|nssdbm3.pdb|4F3F17935848439481CAE62B85DDCD7D1|0x02a00000|0x02a17fff|0
Module|freebl3.dll|3.12.4.0|freebl3.pdb|84A3018DD14B484297AF38972B5373751|0x03cb0000|0x03cf0fff|0
Module|nssckbi.dll|1.75.0.0|nssckbi.pdb|731BD47F47C344C69BE090C4997F63961|0x04800000|0x0484bfff|0
Module|nspr4.dll|4.8.0.0|nspr4.pdb|E327C2DB03D94E198CCCB056A65268EC1|0x10000000|0x10028fff|0
Module|xul.dll|1.9.2.3489|xul.pdb|B9018363477E4AC9962D06989BFFDFEC2|0x6de90000|0x6e9adfff|0
Module|NPSWF32.dll|10.0.2.54|NPSWF32.pdb|E214D1CB28F545C9A386B7554CD5410F1|0x6f540000|0x6fa66fff|0
Module|schannel.dll|6.1.7100.0|schannel.pdb|435BA528322D4EC98BA29394DB32A30D2|0x6fc70000|0x6fca8fff|0
Module|midimap.dll|6.1.7100.0|midimap.pdb|A8C2774CC58D4A9099656AE1281E7AC72|0x717c0000|0x717c6fff|0
Module|msacm32.drv|6.1.7100.0|msacm32.pdb|625BBC09A8CD4328A6531070FAC864FA1|0x717d0000|0x717d7fff|0
Module|dbghelp.dll|6.1.7100.0|dbghelp.pdb|79B3E2040AE54E7D9B23FFA4046DE14E2|0x718a0000|0x7198bfff|0
Module|AudioSes.dll|6.1.7100.0|AudioSes.pdb|C68AD44DD0514B3984501693A7036CF22|0x71990000|0x719c5fff|0
Module|avrt.dll|6.1.7100.0|avrt.pdb|F01E2E77841844A59B746CDE699B2B3A2|0x719d0000|0x719d6fff|0
Module|ksuser.dll|6.1.7100.0|ksuser.pdb|CAD77320EF364F05B7D6E0F891FE6CF72|0x719e0000|0x719e3fff|0
Module|wdmaud.drv|6.1.7100.0|wdmaud.pdb|D2BDD113556142BB866F460B0E2881EF2|0x719f0000|0x71a1ffff|0
Module|wssock32.dll|6.1.7100.0|wssock32.pdb|96E9C8ECFA2B40B7A76F5A7410CC27812|0x71a40000|0x71a46fff|0
Module|MMDevAPI.dll|6.1.7100.0|MMDevAPI.pdb|E35EAD6FFEEB499A9A99A2B2FFF6FEE72|0x71af0000|0x71b28fff|0
```

Done

Friday, July 24, 2009

Search





mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Mozilla Crash Reports

Product

- All
- Camino
- Firefox
- SeaMonkey

Version:

- All
- Firefox 3.0
- Firefox 3.0.1
- Firefox 3.0.10

Operating System

- Windows
- Mac OS X
- Linux
- Solaris

Advanced Filters

Branch:

- 1.9
- 1.9.0
- 1.9.1

Occurs before

mm/dd/yyyy

Within the last

1 Weeks

Stack Signature

is exactly

Filter Crash Reports

Query Results

Results within 1 weeks of now, and the product is one of Firefox, and the version is one of Firefox:3.6a1pre, and the platform is one of mac.

Rank	Signature	#	Win	Mac	Lin	Sol	Bugzilla Ids
1	PORT_ZFree_Util	11	0	11	0	0	
2	nanojit::Assembler::nPatchBranch(unsigned char*, unsigned char*)	8	0	8	0	0	
3	JS_GetClass	6	0	6	0	0	502678 , 502505 , More
4	@0x0 BuildTextRunsScanner::ScanFrame(nsIFrame*)	6	0	6	0	0	
5	Flash_EnforceLocalSecurity	6	0	6	0	0	486805 , More
6	PR_EnumerateAddrInfo	5	0	5	0	0	502360 , More
7		4	0	4	0	0	
8	nsContentSink::ProcessHeaderData(nsIAtom*, nsAString_internal const&, nsIContent*)	4	0	4	0	0	502275 , More
9	CoreFoundation@0xca60	3	0	3	0	0	
10	nsBaseWidget::Destroy()	3	0	3	0	0	503196 , 470487 , More
11	nsFocusManager::GetCommonAncestor(nsPIDOMWindow*, nsPIDOMWindow*)	2	0	2	0	0	
12	@0x0 nsInlineFrame::Reflow(nsPresContext*, nsHTMLReflowMetrics&, nsHTMLReflowState const&, unsigned int&)	2	0	2	0	0	
13	nsSVGGraphicElement::GetTransformToElement(nsIDOMSVGElement*, nsIDOMSVGMatrix**)	2	0	2	0	0	
14	libmozjs.dylib@0x2f8f4	2	0	2	0	0	
15	libmozjs.dylib@0x2fde0	2	0	2	0	0	
16	nsHtml5TreeBuilder::popOnEof()	2	0	2	0	0	
17	js_MonitorLoopEdge(JSContext*, unsigned int&)	2	0	2	0	0	500936 , 499169 , 480822 , More
18	NSSRWLock_LockRead_Util	1	0	1	0	0	427715 , 499455 , More
19	XUL@0x20cf7a	1	0	1	0	0	
20	AffixMgr::suffix_check(char const*, int, int, AffEntry*, char**, int, int*, unsigned short, unsigned short, char)	1	0	1	0	0	
21	nsCrasher::Crash(short)	1	0	1	0	0	
22	libobjc.A.dylib@0xa9c1	1	0	1	0	0	
23	Flash Player@0x3933e6	1	0	1	0	0	
24	nsJPEGDecoder::ProcessData(char const*, unsigned int, unsigned int*)	1	0	1	0	0	

Done

mozilla
crash reports

Firefox ▾ Thunderbird ▾ More ▾ Trend Reports ▾ Advanced Search

Crash Reports in Flash_EnforceLocalSecurity

Results within 1 weeks of now, and the product is one of Firefox, and the version is one of Firefox:3.6a1pre, and the platform is one of mac.

Graph Table Reports Bugzilla

Date	Product	Version	Build	OS	CPU	Reason	Address	Uptime	Comments
2009-07-21 00:12	Firefox	3.6a1pre	20090720031604	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE	0xffff0269	12985	
2009-07-20 16:06	Firefox	3.6a1pre	20090720031604	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE	0x1bf7db62	349	
2009-07-17 02:47	Firefox	3.6a1pre	20090702031635	Mac OS X 10.4.11 8S2167	x86	EXC_BAD_ACCESS / KERN_INVALID_ADDRESS	0x1bbac8bf	181690	
2009-07-16 19:14	Firefox	3.6a1pre	20090613032901	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_INVALID_ADDRESS	0x1d32f2ad	2573	
2009-07-15 12:41	Firefox	3.6a1pre	20090715031744	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE	0xffff0269	8286	
2009-07-15 12:15	Firefox	3.6a1pre	20090712031423	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_INVALID_ADDRESS	0x1533a817	238430	

Done



mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Crash Reports in Flash_EnforceLocalSecurity

Results within 1 weeks of now, and the product is one of Firefox, and the version is one of Firefox:3.6a1pre, and the platform is one of mac.

Graph Table Reports Bugzilla





mozilla crash reports

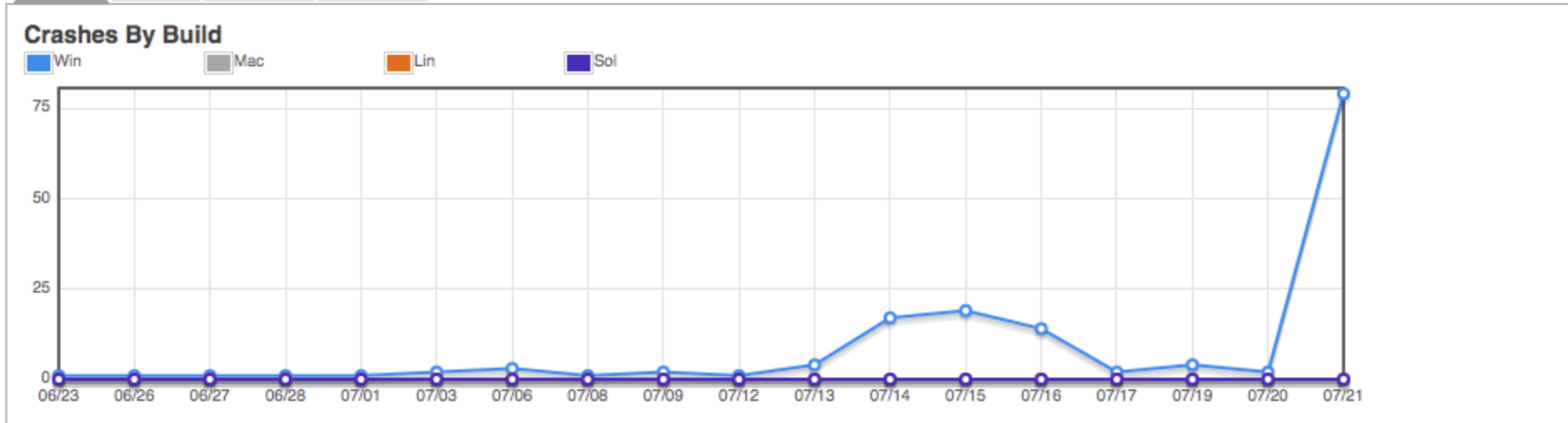
Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Crash Reports in _VEC_memzero

Results within 1 weeks of now, and the product is one of Firefox, and the version is one of Firefox:3.6a1pre.

Graph Table Reports Bugzilla





mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Crash Reports in Flash_EnforceLocalSecurity

Results within 1 weeks of now, and the product is one of Firefox, and the version is one of Firefox:3.6a1pre, and the platform is one of mac.

Graph Table Reports Bugzilla

Bugs for Flash_EnforceLocalSecurity

OPEN

[486805](#) UNCONFIRMED Camino "unexpectedly quits" [@ Flash_EnforceLocalSecurity] on some video-heavy sites



mozilla crash reports

[Firefox](#) ▾ [Thunderbird](#) ▾ [More](#) ▾ [Trend Reports](#) ▾ [Advanced Search](#)

Crash Reports in Flash_EnforceLocalSecurity

Results within 1 weeks of now, and the product is one of Firefox, and the version is one of Firefox:3.6a1pre, and the platform is one of mac.

[Graph](#) [Table](#) [Reports](#) [Bugzilla](#)

Date	Product	Version	Build	OS	CPU	Reason	Address	Uptime	Comments
2009-07-21 00:12	Firefox	3.6a1pre	20090720031604	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE	0xffff0269	12985	
2009-07-20 16:06	Firefox	3.6a1pre	20090720031604	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE	0x1bf7db62	349	
2009-07-17 02:47	Firefox	3.6a1pre	20090702031635	Mac OS X 10.4.11 8S2167	x86	EXC_BAD_ACCESS / KERN_INVALID_ADDRESS	0x1bbac8bf	181690	
2009-07-16 19:14	Firefox	3.6a1pre	20090613032901	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_INVALID_ADDRESS	0x1d32f2ad	2573	
2009-07-15 12:41	Firefox	3.6a1pre	20090715031744	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE	0xffff0269	8286	
2009-07-15 12:15	Firefox	3.6a1pre	20090712031423	Mac OS X 10.5.7 9J61	x86	EXC_BAD_ACCESS / KERN_INVALID_ADDRESS	0x1533a817	238430	

Done



mozilla crash reports

Crash ID or Signature

Firefox Thunderbird More Trend Reports Advanced Search

Firefox 3.6a1pre Crash Report [@Flash_EnforceLocalSecurity]

Get Help

ID: ddb8ab07-3bdb-4c92-8228-c0f7d2090721

Signature: Flash_EnforceLocalSecurity

Details Modules Raw Dump

Signature	Flash_EnforceLocalSecurity
UUID	ddb8ab07-3bdb-4c92-8228-c0f7d2090721
Time	2009-07-21 00:12:17.284743
Uptime	12985
Last Crash	12992 seconds before submission
Product	Firefox
Version	3.6a1pre
Build ID	20090720031604
Branch	1.9.2
OS	Mac OS X
OS Version	10.5.7 9J61
CPU	x86
CPU Info	GenuineIntel family 6 model 15 stepping 10
Crash Reason	EXC_BAD_ACCESS / KERN_PROTECTION_FAILURE
Crash Address	0xffff0269
User Comments	
Processor Notes	

Related Bugs

Trend Reports



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mozilla crash reports

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Top Crashers for Firefox 3.6a1pre

Below are the top 100 crashers as of 2009-07-08 07:46:32.

Rank	Signature	#	Win	Lin	Mac
1	_VEC_memzero	160	160	0	0
2	JS_GetClass	158	140	0	18
3	fastzero_l	68	68	0	0
4	nsContentSink::ProcessHeaderData(nsIAtom*, nsAString_internal const&, nsIContent*)	62	45	5	12
5	js3250.dll@0x3ae04	59	59	0	0
6	js_Interpreter	58	56	1	1
7	@0x0	57	57	0	0
8	strlen	54	53	0	1
9	nsAlertsIconListener::SendClosed()	50	0	50	0
10	memset	47	47	0	0
11	nsFocusManager::GetCommonAncestor(nsPIDOMWindow*, nsPIDOMWindow*)	37	32	0	5
12	js3250.dll@0x2e9b6	32	32	0	0
13	RtlEnterCriticalSection	30	30	0	0
14	@0x0 libflashplayer.so@0x1c8b4c	19	0	19	0
15	npjava13.dll@0x1674	17	17	0	0
16	strchr XPT_DoCString	17	17	0	0
17	free PORT_ZFree_Util	17	17	0	0
18	NPJava13.dll@0x12e7	16	16	0	0
19	TraceRecorder::compile(JSTraceMonitor*)	16	16	0	0
20	BuildTextRunsScanner::ScanFrame(nsIFrame*)	16	14	2	0

Done



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Top Crashers By URL for Firefox 3.5

Below are the top crash signatures by URL from 2009-07-08 to 2009-07-22

[Switch to by breakdown by Domain](#)

URL	#
<input type="checkbox"/> http://www.biid.de/ #	40
NPSWF32.dll@0x5b2c8	28
NPSWF32.dll@0xbee93	8
NPSWF32.dll@0x5aa48	4
<input type="checkbox"/> http://pages.ebay.de/viewitem/tutorial.html #	17
<input type="checkbox"/> http://www.apple.com/trailers/weinstein/inglouriousbasterds/ #	15
QuickTimeH264.qtx@0x78ea0	15
<input type="checkbox"/> http://apps.facebook.com/restaurantcity/ #	12
NPSWF32.dll@0x1e6afd	12
<input type="checkbox"/> http://apps.facebook.com/farmtown/play/ #	10
NPSWF32.dll@0x77540	5
memmove	3
NPSWF32.dll@0x775b1	2
<input type="checkbox"/> http://s3.vuaphapthuat.zooz.vn/s/s7/index.php #	9
NPSWF32.dll@0x1c791a	5
NPSWF32.dll@0x1c6168	4
<input type="checkbox"/> http://www.moshimonsters.com/monsters #	8
NPSWF32.dll@0x216821	6

Done

Top Crashers By URL for Firefox 3.1b2

Below are the top crash signatures by URL from 2009-06-25 to 2009-07-09

[Switch to by breakdown by Domain](#)

URL	#
#	34
#	19
#	12
#	10
#	10
#	9
#	8
#	6
#	4
#	4
#	4
#	4
#	4
#	4
#	4
#	3
#	3
#	3
#	3

Done

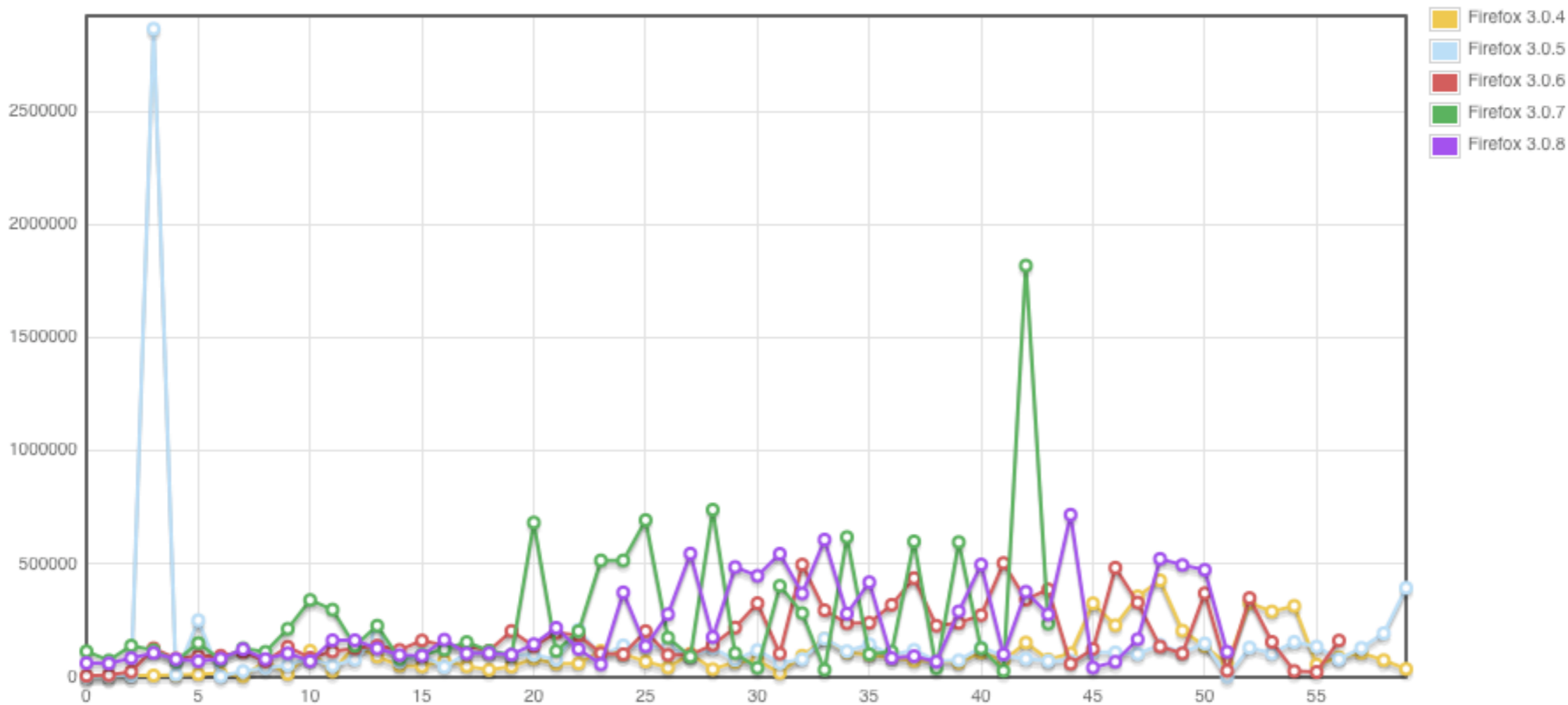
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mozilla crash-stats

Mean Time Before Failure

Firefox major releases

Release type: [Major](#) [Milestone](#) [Development](#)



Average number of seconds before a crash. Day 0 of release through day 60.

[Drill down on OS](#)

- Firefox 3.0.4- MTBF 4378 seconds based on 2360938 crash reports of 2058808 users (blackboxen) from period between 2008-11-05 and 2009-01-03
- Firefox 3.0.5- MTBF 25551 seconds based on 4903072 crash reports of 4068321 users (blackboxen) from period between 2008-12-10 and 2009-02-07
- Firefox 3.0.6- MTBF 3206 seconds based on 2940288 crash reports of 436 users (blackboxen) from period between 2009-02-03 and 2009-04-03
- Firefox 3.0.7- MTBF 1077 seconds based on 1093388 crash reports of 0 users (blackboxen) from period between 2009-03-04 and 2009-05-02
- Firefox 3.0.8- MTBF 4146 seconds based on 2828870 crash reports of 0 users (blackboxen) from period between 2008-03-27 and 2009-05-25

Want to slice and dice? [CSV Formatted Raw Data](#)

The Why and the How



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Open Wins



Screenshot: Adriano Castro on Flickr <http://www.flickr.com/photos/acastro>



Open Has Limits

- Mozilla values privacy
- Project has vacillated over fields like email
- Urls and other data are aggregated and truncated
- QA and Devs would love more types of crash data, but privacy concerns trump these enhancements



Development

- Evolutionary - Incremental
- Community Driven - Bugzilla
- No “benevolent dictator”
- Driven by the quest for Quality Software



Technology

- PHP / Kohana
- jQuery
- flot
- ezComponents
- Postgresql
- Memcached



The Internet



Crash Reporting: Mozilla's Open Source Solution

IRC: #breakpad (irc.mozilla.com)

<http://code.google.com/p/google-breakpad/>

<http://code.google.com/p/socorro/>

