4 Free Things to Do with a Slow SQL Server

March 3, 2017[Brent Ozar](https://www.brentozar.com/archive/author/brento/)[Processes and Practices](https://www.brentozar.com/archive/category/processes-and-practices/), [Wait Stats](https://www.brentozar.com/archive/category/wait-stats/)[13 Comments](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comments)

FROM: <https://www.brentozar.com/archive/2017/03/sql-server-slow/>

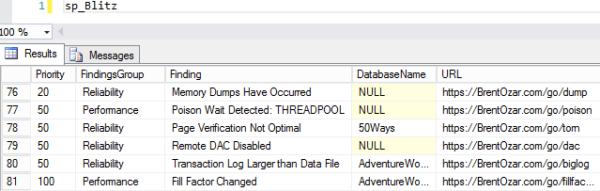
**Step 1. Run sp\_Blitz and look for urgent warnings.**sp\_Blitz is one of the free scripts in [our First Responder Kit](https://www.brentozar.com/first-aid/). Just open the sp\_Blitz.sql, run that to create the stored procedure, and type:

sp\_Blitz

1. sp\_Blitz

sp\_Blitz

It returns a prioritized list of things that are wrong, broken, or dangerous about your SQL Server. Focus on things in priority 1 through 50 – these are the big, urgent issues that can get you fired, or can cause showstopper problems:

[](https://www.brentozar.com/wp-content/uploads/2017/02/sp_Blitz_Results.png)

sp\_Blitz results

If you’ve never run sp\_Blitz before, the results can look overwhelming. That’s okay – just read through them one by one, copy/pasting the URL into your web browser for any alerts that you don’t understand.

This is like getting a totally free health check on your server. Often, we find huge performance issues in here, like misconfigured memory or parallelism settings. If you can, fix as much of the low-hanging fruit in here first – often, you can make a huge difference in performance just by working through this list.

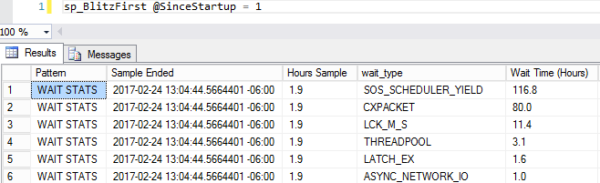
**Step 2. Run sp\_BlitzFirst @SinceStartup = 1 to get your top wait type.** This is another script in the First Responder Kit, and it’s focused on performance. Install it by running the contents of sp\_BlitzFirst.sql, and then run it:

sp\_BlitzFirst @SinceStartup = 1

1. sp\_BlitzFirst @SinceStartup = 1

sp\_BlitzFirst @SinceStartup = 1

The @SinceStartup parameter tells you what SQL Server’s wait stats have been since it started up:

[](https://www.brentozar.com/wp-content/uploads/2017/02/sp_BlitzFirst_SinceStartup_WaitStats.png)

sp\_BlitzFirst showing wait stats since startup

When SQL Server is working on stuff, it tracks what it’s been waiting on. The columns:

* WAIT STATS – the thing we’re measuring (if you go down further in the results, we show you more stuff in sp\_BlitzFirst – ignore that for now)
* Sample Ended – when you ran sp\_BlitzFirst
* Hours Sample – how long the server has been up
* Wait\_Type – cryptic, more on this in a second
* Wait Time (Hours) – how long SQL Server has waited on this wait type

Here, in 1.9 hours, SQL Server has spent 116.8 hours waiting on something called SOS\_SCHEDULER\_YIELD. These wait types have a lot of oddball cryptic names, but here are some of the most common ones:

* SOS\_SCHEDULER\_YIELD – waiting on CPU cycles
* PAGEIOLATCH\* – waiting to read data pages from a data file
* WRITELOG – waiting to write delete/update/inserts (DUIs) to the log file
* CXPACKET – parallelism, and this one’s complex enough that [I wrote a post for it](https://www.brentozar.com/archive/2013/08/what-is-the-cxpacket-wait-type-and-how-do-you-reduce-it/)

**Step 3. Run sp\_BlitzCache to find the resource-intensive queries.** The next script in our arsenal will examine SQL Server’s query stats. Run sp\_BlitzCache.sql to install the proc, and then execute it:

sp\_BlitzCache @SortOrder = 'cpu'

1. sp\_BlitzCache @SortOrder = 'cpu'

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In that example, I’m sorting by the most CPU-intensive queries, but you can also sort by reads, writes, duration, executions, and [more](https://www.brentozar.com/blitzcache/).

**Step 4. Ask for help.** Now, you’re armed with great configuration data about your SQL Server, your top wait type bottleneck, and the queries causing that bottleneck. You’re much better equipped to post questions at [DBA.StackExchange.com](http://dba.stackexchange.com/), [SQLServerCentral’s forums](https://www.sqlservercentral.com/Forums/), or [SQLteam.com](http://forums.sqlteam.com/).

[](https://www.brentozar.com/sql-critical-care/)And hey, we’re here for you too. We’re in the business of [making slow SQL Servers go faster.](https://www.brentozar.com/sql-critical-care/) We’re not free, though – make sure you give the above stuff a shot first, and if you can’t make the progress you want fast enough, that’s where we come in.

[141](javascript:void(0))

[](https://www.brentozar.com/)

[Brent Ozar](https://www.brentozar.com/archive/author/brento/)

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I make Microsoft SQL Server faster and more reliable. I love teaching, travel, and laughing. I live in Chicago with my wife Erika and my dog Ernie. I'm on an epic life quest to have fun and make a difference. In my spare time, I'm behind a bunch of stuff like GroupBy.org, FirstResponderKit.org, DBAreactions.com, and SQLServerUpdates.com.

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**Steve Austin**

[March 3, 2017 11:34 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344424)

“in 1.9 hours, SQL Server has spent 116.8 hours waiting”

Am I missing something here? Those figures seem a little… Off

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[**Brent Ozar**](https://www.brentozar.com/)

[March 3, 2017 11:36 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344425)

Steve – brace yourself: SQL Server can run…MORE THAN ONE QUERY AT A TIME!

I know, stunning, right? I’ve just opened an amazing world of possibilities for you.

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**Wesley A Crockett**

[March 3, 2017 11:39 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344426)

No. I don’t believe it. I substitute your reality and replace it with my own!

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**Steve Austin**

[March 3, 2017 11:42 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344427)

Yeah, ok, it’s been a long day here, thanks for pointing out the blindingly obvious

And keep up the great work, I always learn something new reading your blog posts!

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[**Brent Ozar**](https://www.brentozar.com/)

[March 3, 2017 11:44 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344429)

Hahaha, you’re welcome, sir.

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**Ray Yan**

[March 6, 2017 5:50 pm](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344771)

I probably missed something, but I can’t find sp\_BlitzFirst listed in your replied email after I registered my email address (selected all 3 options) and clicked ‘Send me the goods’. Even I received your email reply, but I still can’t find any download link in that email, 3 links in it all point me back to the very similar pages that I find in your ‘Free Stuff’ area. And, this link is also dead: <https://github.com/BrentOzarULTD/SQL-Server-First-Responder-Kit>

[Reply](https://www.brentozar.com/archive/2017/03/sql-server-slow/?replytocom=2344771#respond)

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**Ray Yan**

[March 6, 2017 6:06 pm](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344772)

HaHaHa, apparently the sysadmin blocked the access to github! He has downloaded the kit for me, so all is good now. But the email reply still doesn’t have any download link, this is no longer important:-)

[Reply](https://www.brentozar.com/archive/2017/03/sql-server-slow/?replytocom=2344772#respond)

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[**Brent Ozar**](https://www.brentozar.com/)

[March 7, 2017 6:10 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344819)

There you go.

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**Richard**

[March 7, 2017 11:57 pm](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344943)

Are you aware of any issue running this on SQL 2008R2 (10.50.4000)? I was running the latest version of sp\_blitz across my Prod servers today to check for problems and when I got to one running 2008R2 the server crashed within a minute of me running it!

I have just tried the same on the dev, test and UAT versions of that server and UAT crashed as well.

Prod:  
SQL Trace was stopped due to server shutdown. Trace ID = ‘1’. This is an informational message only; no user action is required.  
SQL Server is terminating because of fatal exception c0000005. This error may be caused by an unhandled Win32 or C++ exception, or by an access violation encountered during exception handling. Check the SQL error log for any related stack dumps or messages. This exception forces SQL Server to shutdown. To recover from this error, restart the server (unless SQLAgent is configured to auto restart).  
Error: 17311, Severity: 16, State: 1.  
Problem creating symptom dump file due to internal exception

UAT managed to create a dump and had a slightly different error:  
SqlDumpExceptionHandler: Process 21200 generated fatal exception c0000005 EXCEPTION\_ACCESS\_VIOLATION. SQL Server is terminating this process.

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[**Brent Ozar**](https://www.brentozar.com/)

[March 8, 2017 6:34 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2344975)

Richard – no, but that build (10.50.4000) is out of support – I’d probably start by patching my SQL Servers. If that fixes it, let us know at [http://firstresponderkit.org](http://firstresponderkit.org/). If there’s a bug in 10.50.4000, we can build in a short-circuit to avoid running on that build.

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**Richard**

[March 8, 2017 1:29 pm](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2345023)

Thanks Brent. This looks like a likely candidate and was fixed in CU10 for SP2:

<https://support.microsoft.com/en-us/help/2911026>

Time for me to do some patching

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[**Brent Ozar**](https://www.brentozar.com/)

[March 8, 2017 1:44 pm](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2345024)

Oh wow, good find! I’ve added an issue for that:

<https://github.com/BrentOzarULTD/SQL-Server-First-Responder-Kit/issues/762>

[Reply](https://www.brentozar.com/archive/2017/03/sql-server-slow/?replytocom=2345024#respond)

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**Marcin S.**

[March 24, 2017 9:56 am](https://www.brentozar.com/archive/2017/03/sql-server-slow/#comment-2346458)

Oooh, seems I’ve been lucky to patch out SQL Server and solve issues / delete archaic memory dumps from my 2008R2. But that’d be either rare bug or triggered by some newer sp\_Blitz build, because I did run it many times on 10.50.4000 with some old memory dumps still present on discs.