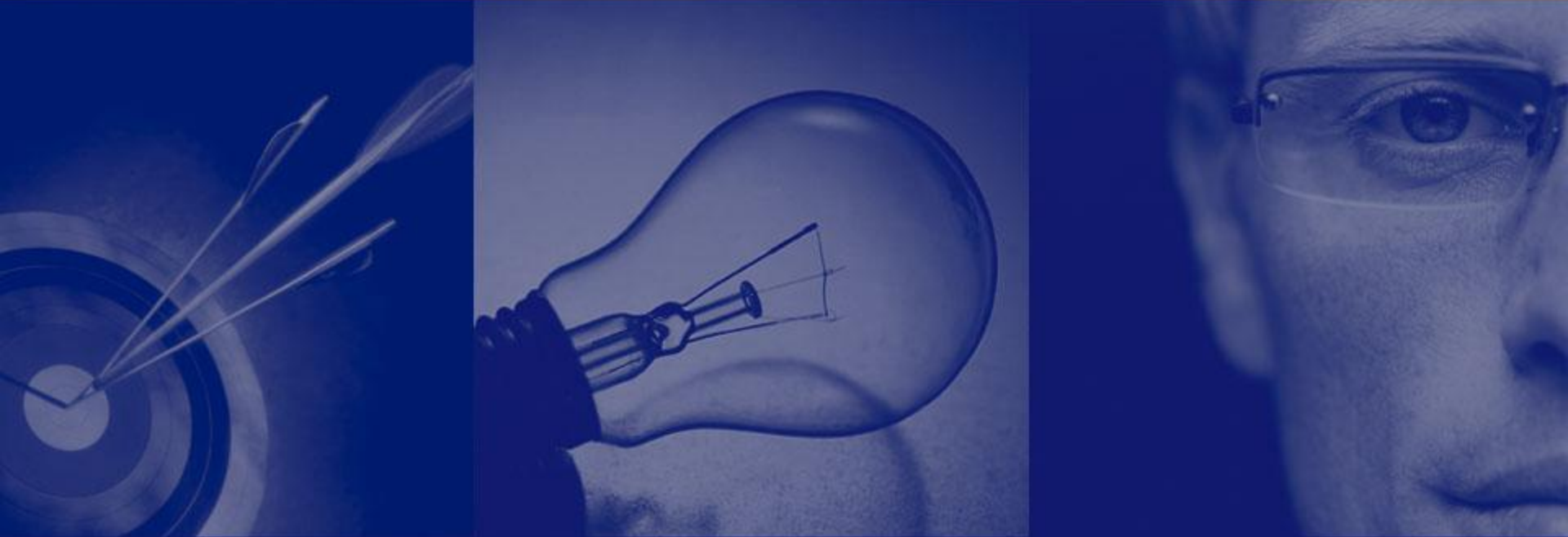


Howzit Do That? SQL Server Internals & Architecture



Kevin Kline, *Quest Software*

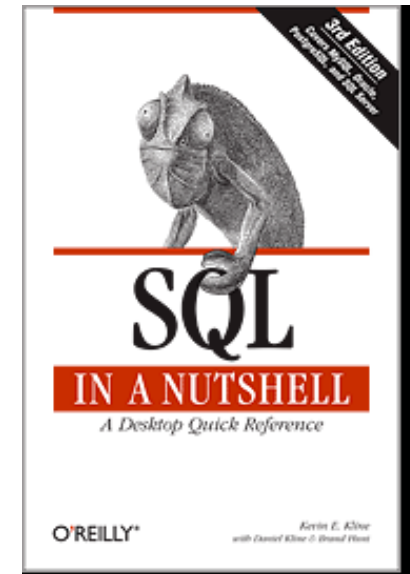
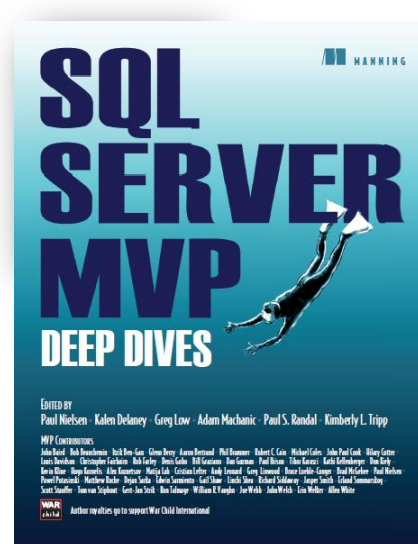


Agenda

- Speaker Bio
- Droppin' Acid with RDBMSes
- Our Host and Tour Guide
- The Life of a SELECT Statement
- Dancing for Cache
- The Life of a write DML Statement
- Summary
- Q & A

Kevin Kline

- SQL Server Expert for Quest Software
- Former developer, DBA, and enterprise architect since '86
- Former president of PASS (www.sqlpass.org)
- Microsoft MVP since '04
- Author of *SQL in a Nutshell* and 9 other books
- Twitter **@kekline**
- Blogs at <http://sqlblog.com> and <http://KevinEKline.com>



Relational Databases 101, or, Why the Heck SQL Server Does the Crazy Stuff it Does?!?

- ACID properties of Transactions
 - Atomic
 - Consistent
 - Isolated
 - Durable
- Speed, scalability, and performance
- Maximize hardware
- Competitive features

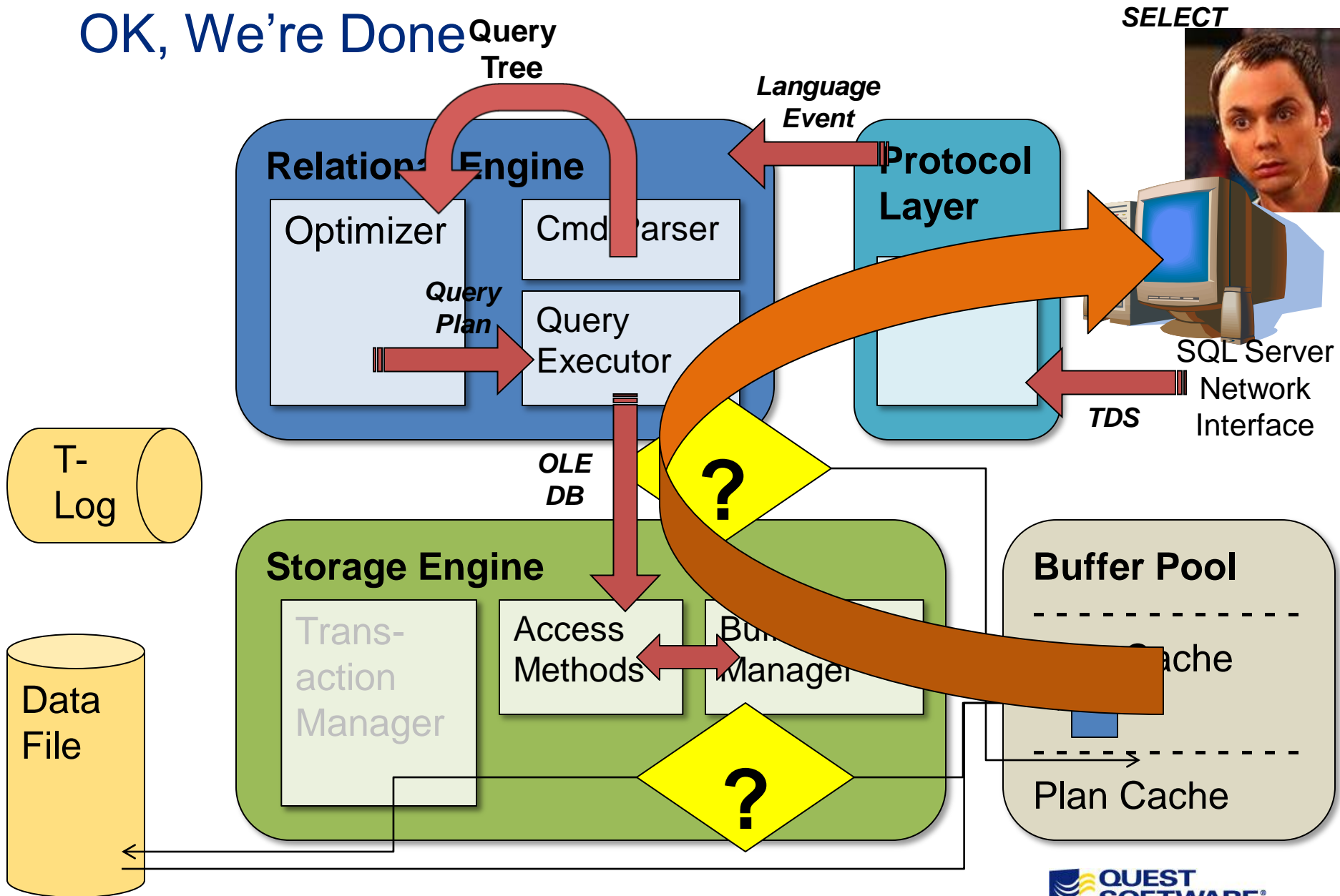


Architecture & Internals – With Your Guide, The Ultimate Nerd Transaction



Talk *nerdy* to me, baby!

OK, We're Done



SELECT



SQL Server
Network Interface

Private Dancer – Dances for Cache

- How long does a page of data or a block of code stay in cache?
- Uses a LRU algorithm
- Usually performed by the lazy-writer, but can also be done by any worker thread after scheduling its own I/O



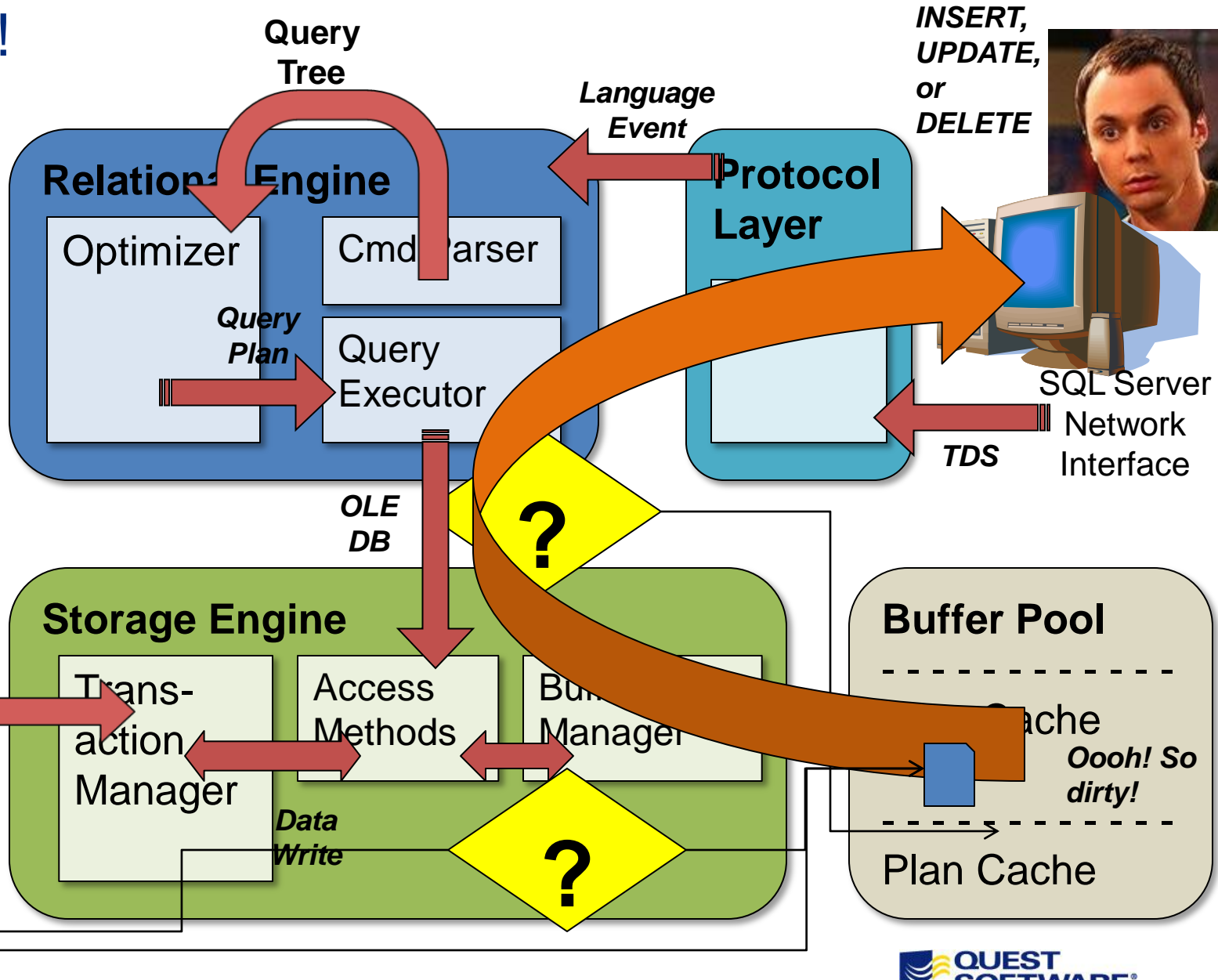
Proc Plan Aging



Memory

getord		
16	12	
	finduser	
	7	4

But Wait!
There's
More!



SUMMARY

- Understanding the internals is as important as any other bit of info you might have
- Remember:
 - The key components of the relational engine
 - The key components of the storage engine
 - Key areas of cache
 - Lock and Log Managers
 - Lazywriter and checkpoint processes
- More info?

Quest Software Resources for SQL Server

Free posters, guides, and other goodies.

[HTTP://www.quest.com/backstage/promotion.aspx](http://www.quest.com/backstage/promotion.aspx)

SQLServerPedia – SQL Server knowledge base, straight from the experts.

[HTTP://www.SQLServerPedia.com](http://www.SQLServerPedia.com)



SQL Server Community – Online discussion forums, customization library, and beta programs.

[HTTP://SQLServer.quest.com](http://SQLServer.quest.com)

SQL Server Backstage – All things SQL Server at Quest including our Pain of the Week Webcasts.

[HTTP://www.quest.com/BackStage](http://www.quest.com/BackStage)



Questions ?



- Send questions to me at: kevin.kline@quest.com
- Twitter @kekline
- Blogs at SQLServerPedia.com, SQLblog.com, SQLMag.com
- Rate Me – <http://SpeakerRate.com/kekline/>
- Content at <http://KevinEKline.com/Slides/>