

# **SQL Server Extended Events**

**...Extended Events From SQL Server 2008 thru 2014**

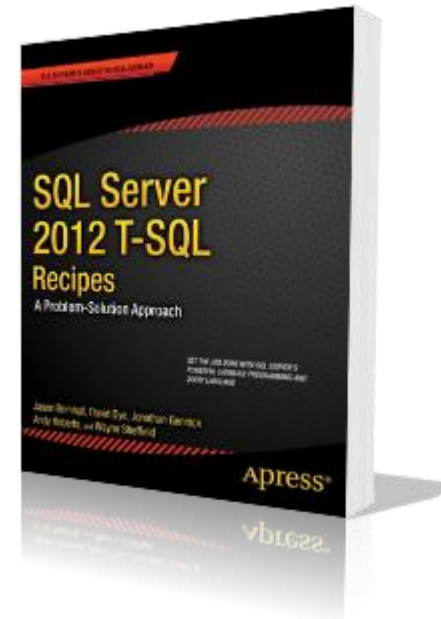
# About Me...



<sup>3</sup>SOLV



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Brimhall



# What is XE?

- **A general event handling system.**
  - **It is highly configurable**
  - **Enables collecting data to troubleshoot a performance problem.**
  - **Why use it?**
    - **Lightweight**
    - **Troubleshoot deadlocks, cpu, memory issues amongst other things.**
    - **Can correlate with Event Tracing for Windows (ETW)**

# Developers

- **Code it like they stole it**
- **Code it like they rented it**

# Monologue



# And then...

- **What's Air Filters got to do with anything?**
  - **Profiler**
  - **XE**
- **Comparison By Jason Strate**
  - **<http://bit.ly/StrateXEPerf>**

# Metadata

- **Intro to the DMVS**
- **Components of XE**

# DMVs

- **SQL 2008 and 2012 utilize 9 DMVs to manage the metadata**



# Packages

- **Registered in XE Engine and contain information about XE objects**
  - **SQL 2008 has 4**
  - **SQL 2012 has 9**
  - **SQL 2014 has 12**

# Channels

- **Signify to whom an event may be of interest**
  - **Admin**
    - Typically signal an error that generally has a defined solution
  - **Analytic**
    - Geared toward performance investigations
  - **Debug – typically used by CSS**
  - **Operational – similar to admin**

# Events

- **An Event is a specific point where something of interest occurred inside the Database Engine**
  - **SQL 2008 has 253 events**
  - **SQL 2012 has 446**
  - **SQL 2014 has 872 (~95.5% increase)**

# Actions

- **Bound to events within an Event Session and perform a specified task**
  - **SQL 2008 has 35 actions**
  - **SQL 2012 has 43 actions**
  - **SQL 2014 has 48 actions**

# Targets

- **Destination of the Event Session**
  - **Memory**
  - **File**
    - **Synchronous or Asynchronous**
  - **Histogram**
  - **Counter**
  - **Pairing**
    - **Asynchronous and to determine unmatched sets**

# Predicates

- **Provide a filtering mechanism to XE**
- **Very Important in XE**
  - **Can short-circuit an Event**
- **Two Types**
  - **Comparison**
  - **State Data**

# Sessions

- **Sessions are a collection of events, actions, predicates, and targets**
- **DML**
  - **Create / Alter / Drop**

# **system\_health**

- **Enabled by default**
- **XE Session to track**
  - **Locks**
  - **Deadlocks**
  - **Latches**
  - **Ring\_buffer**
  - **Wait stats**
  - **CLR (in 2012)**
  - **c:\Program Files\Microsoft SQL  
Server\<InstanceDesignator>\MSSQL\Install\utables.sql**



# Demos



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