



Trevor Barkhouse
An Introduction to
Profiler and SQL Trace

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The background of the slide is a collage of several axial CT scan images of the human abdomen. The images are arranged in a grid-like fashion, with some overlapping. They show internal organs like the liver, kidneys, and spine in cross-section. The overall color scheme is a monochromatic blue-grey, typical of medical imaging prints.

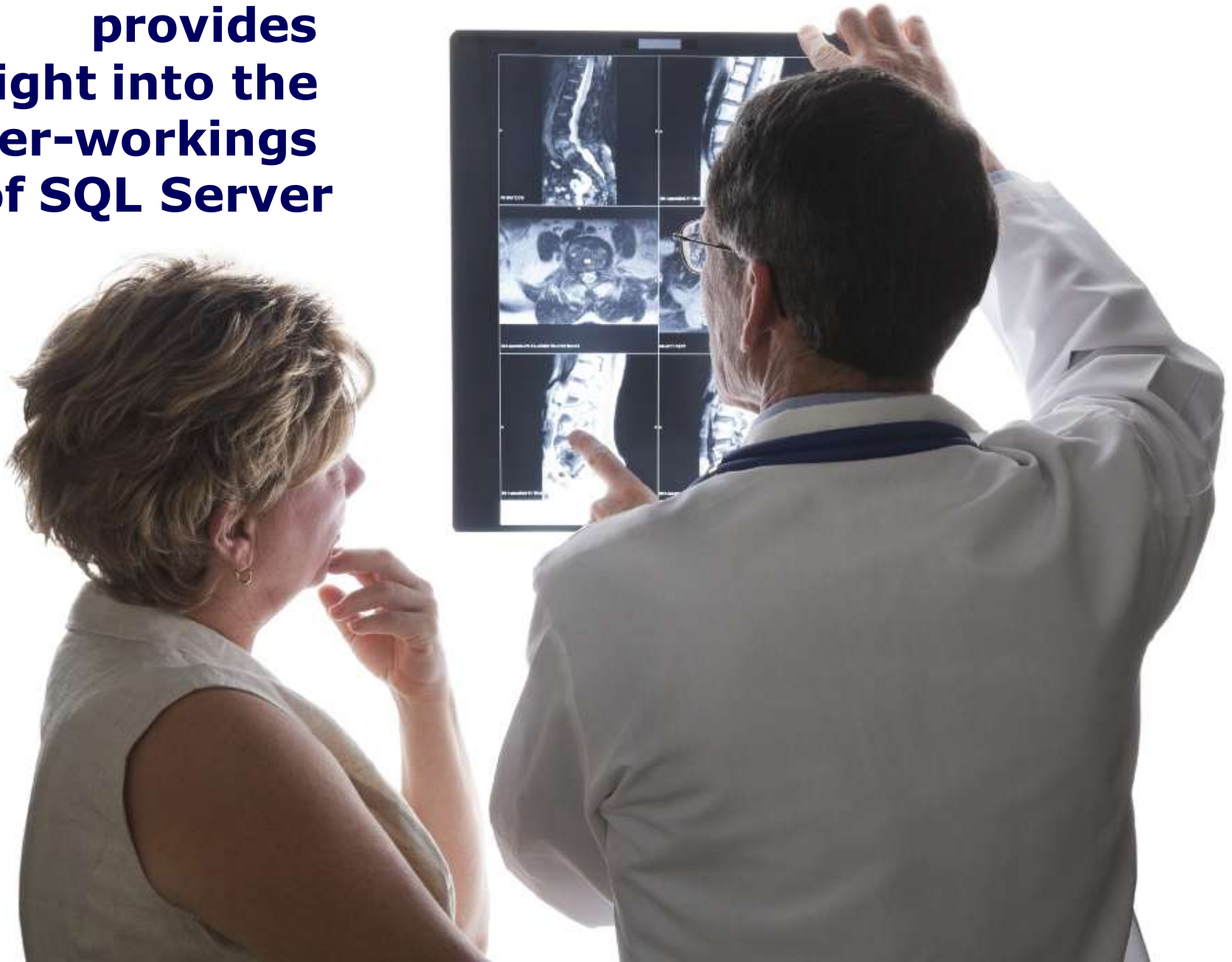
An Introduction to Profiler and SQL Trace

**Trevor Barkhouse
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**What if doctors
had to rely
entirely on a
patient's
complaint and
outward
symptoms?**



**SQL Trace
provides
insight into the
inner-workings
of SQL Server**

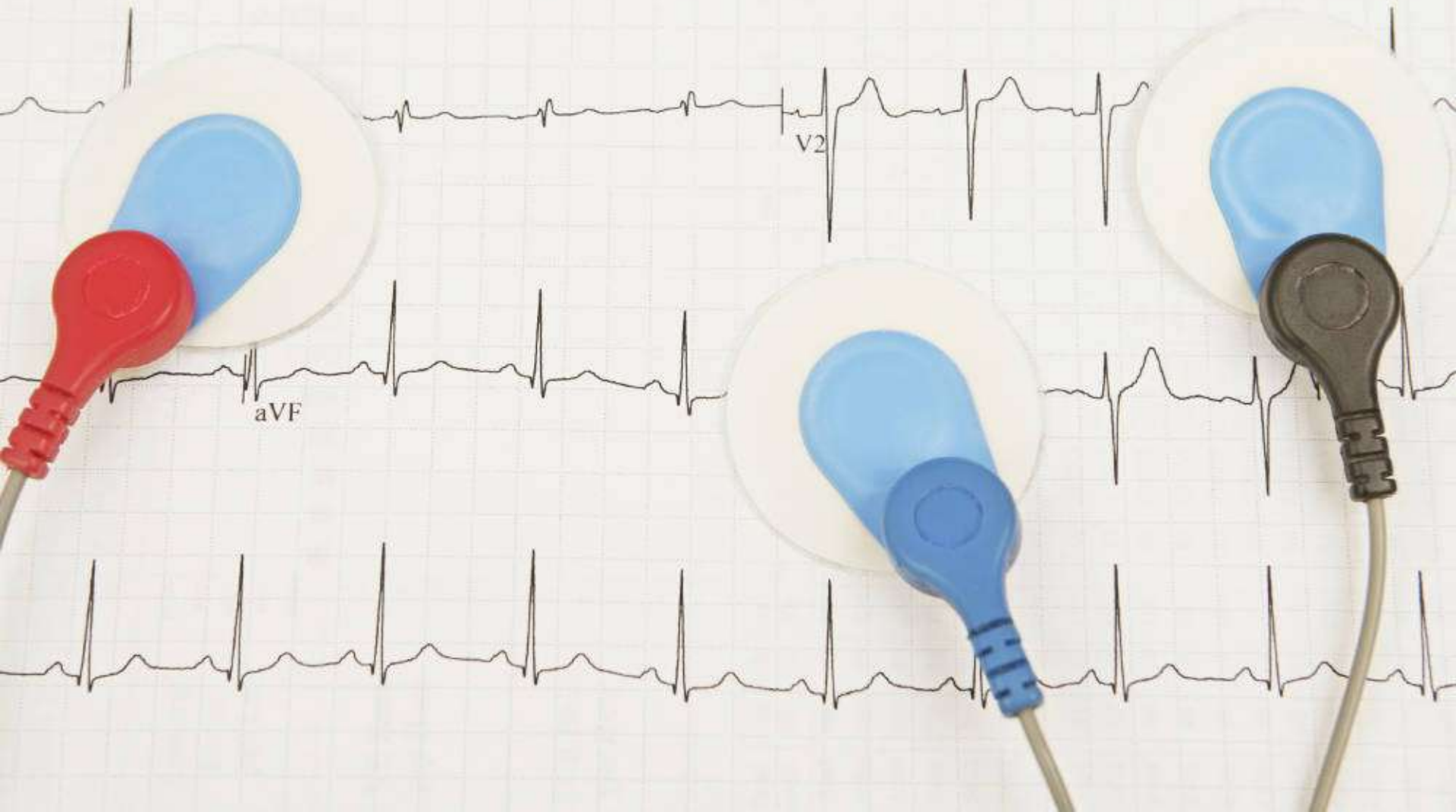


Contact Information



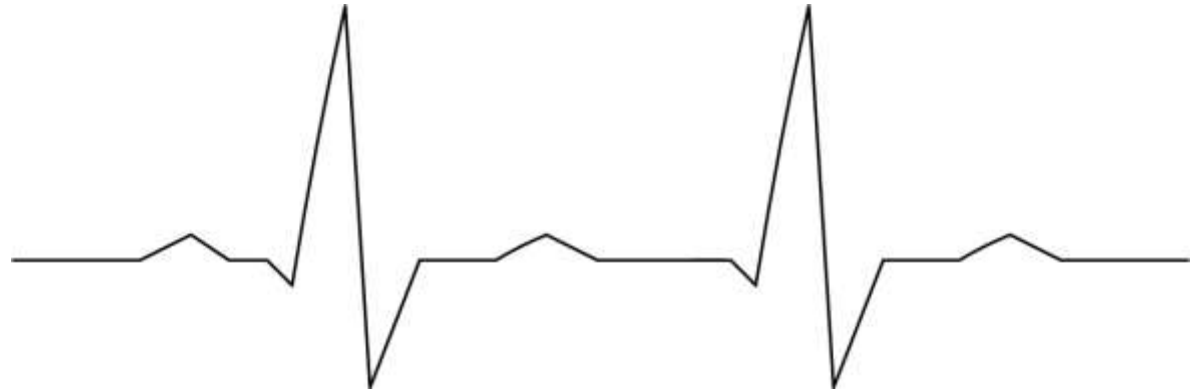
tbarkhouse@terremark.com

What is Tracing?



What is an Event?

“An event is an action generated within an instance of SQL Server Database Engine.”



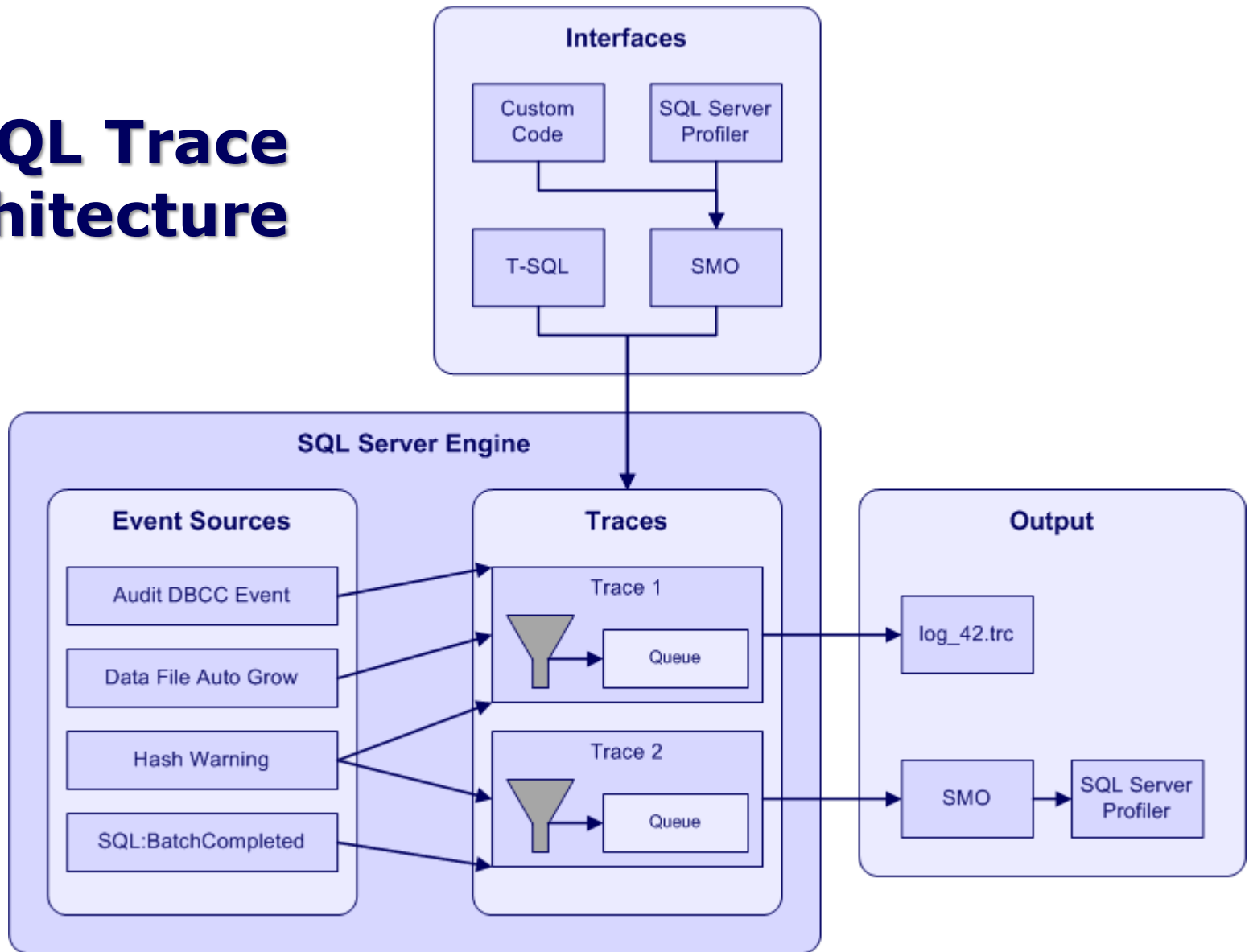
Rudimentary Tracing

```
PRINT Convert(Char(23), Current_TimeStamp, 121) +
    ' - Before inserting rows into the [dbo].[StagingTable07] table.';

INSERT INTO [dbo].[StagingTable07]
SELECT [ProductID],
    [Name],
    [Color],
    [StandardCost],
    [ListPrice],
    [Size],
    [Weight],
    [ProductLine],
    [Class],
    [Style],
    [ProductSubcategoryID],
    [ProductModelID]
FROM [Production].[Product]
WHERE (
    EXISTS (
        SELECT *
        FROM [#ProductModelList] AS [PML]
        WHERE ([PML].[ProductModelID] = [Production].[Product].[ProductModelID])
    )
);

PRINT Convert(Char(23), Current_TimeStamp, 121) +
    ' - After inserting ' +
    Cast(@@RowCount AS VarChar(11)) +
    ' row(s) into the [dbo].[StagingTable07] table.';
```

SQL Trace Architecture



The Default Trace

- Introduced in SQL Server 2005
- Built-in, enabled by default
- Low overhead
- Captures some useful data
- Unfortunately, can't be customized





Demonstrations

Profiler's Infamy



Problems with SQL Trace

- Generates extra data
- Filtering is not efficient
- Must be capturing the right data
- Must be running at the right time
- Other tools exist



Problems with Profiler

- Extra resources are used to:
 - Pivot data
 - Render graphically
 - Buffer the display
- The client may not be able to keep up with the server



Prescriptive Guidance



Use the Right Tool for the Job

- Also consider:
 - Querying system meta data:
 - The system catalog
 - Dynamic Management Views (DMVs)
 - Performance counter data
 - Extended Events (XE)
 - Event Tracing for Windows (ETW)



Capture Only What You Need!



- Carefully select:
 - Event classes
 - Data columns
- Use filters
 - Target specific objects
 - Exclude events with NULLs
 - New in SQL Server 2005

Impose Limits on Your Traces

- Set a maximum size
 - In megabytes or event count
- Set a stop time



Choose Your Output Wisely

- Avoid using Profiler in production
 - Server-side traces are acceptable
- Don't trace directly into a table
- Be careful with remote tracing
- Segregate your trace file

Contact Information



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