

TROUBLESHOOTING QUERY PERFORMANCE

**THURSDAY
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Presented by
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 Denver Area Access Users Group

Who am I?

- MS Access / SQL Server developer since 2007 (15 years)
- Owner of Grandjean & Braverman, Inc. since 2016 (6 years)
- Top 15 all-time contributor to the [ms-access] tag at Stack Overflow
- Write daily articles on Access and VBA at **nolongerset.com**
- **Microsoft Access MVP** since November 2021



What to Expect Today

- **Breadth not depth**
- **Permalink to resources (on last slide):**
 - Slide Deck PDF
 - Further Reading

Outline

- **VBA vs. SQL:** why do we need these tools?
- **JetShowPlan:** debug Access sources
- **TraceSQLMode:** debug ODBC sources
- **XEvent Profiler:** debug SQL Server sources
- **ProcMon:** debug file and registry issues
- **WireShark:** debug network issues

VBA vs. SQL

- VBA is a **procedural** language
 - You tell the computer *what to do*
- SQL is a **declarative** language
 - You tell the computer *what you want*
- Pull back the curtain with these tools

JetShowPlan

- View Access Query Plans
- Sample File
- “Syntax Highlighting” with **Notepad++**
- Enabling JetShowPlan in the **Registry**
- Using **AutoHotKey** to toggle JetShowPlan
- Using **Everything** to find showplan.out

ODBC Trace SQL Mode

- Any ODBC source, not just SQL Server
- How Access reads from ODBC sources:
 - SQLExecDirect
 - SQLPrepare
 - SQLExecute:
 - (GOTO BOOKMARK) vs. (MULTI-ROW FETCH)

XEvent Profiler

- Successor to SQL Server Profiler
- Part of SQL Server Management Studio
- Runs on **server**, not on client
- More details than Trace SQL Mode

Process Monitor - ProcMon

- Logs Windows API calls
 - File System
 - Windows Registry
 - Network
- Good filtering is key (signal vs. noise)

Wireshark - Packet Sniffer

- More details than ProcMon network log
- See packets used for network handshake
- Use it to troubleshoot:
 - Network tables hanging
 - Firewall issues
 - Routing/VPN issues

Wireshark - Packet Sniffer

ip.addr==10.1.1.242

No.	Time	Source	Destination	Protocol	Length	Info
73	17.913200	10.0.6.149	10.1.1.242	TCP	66	55941 → 445 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
76	18.919728	10.0.6.149	10.1.1.242	TCP	66	55944 → 139 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
79	20.913584	10.0.6.149	10.1.1.242	TCP	66	[TCP Retransmission] 55941 → 445 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
80	21.920368	10.0.6.149	10.1.1.242	TCP	66	[TCP Retransmission] 55944 → 139 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
115	26.914021	10.0.6.149	10.1.1.242	TCP	62	[TCP Retransmission] 55941 → 445 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 SACK_PERM=1
116	27.921119	10.0.6.149	10.1.1.242	TCP	62	[TCP Retransmission] 55944 → 139 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 SACK_PERM=1
150	46.785125	10.0.6.149	10.1.1.242	TCP	66	55946 → 80 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
151	46.786403	10.1.1.242	10.0.6.149	TCP	66	80 → 55946 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460 SACK_PERM=1 WS=512
152	46.786480	10.0.6.149	10.1.1.242	TCP	54	55946 → 80 [ACK] Seq=1 Ack=1 Win=65536 Len=0
153	46.786568	10.0.6.149	10.1.1.242	HTTP	209	OPTIONS /tclaims/taxbilling/Shared/ HTTP/1.1
154	46.788432	10.1.1.242	10.0.6.149	TCP	60	80 → 55946 [ACK] Seq=1 Ack=156 Win=7168 Len=0
280	78.348303	10.0.6.149	10.1.1.242	TCP	54	55946 → 80 [RST, ACK] Seq=156 Ack=1 Win=0 Len=0
281	78.352797	10.0.6.149	10.1.1.242	TCP	66	55950 → 445 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
282	79.360478	10.0.6.149	10.1.1.242	TCP	66	55953 → 139 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
283	81.352981	10.0.6.149	10.1.1.242	TCP	66	[TCP Retransmission] 55950 → 445 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
286	82.361607	10.0.6.149	10.1.1.242	TCP	66	[TCP Retransmission] 55953 → 139 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
321	87.354658	10.0.6.149	10.1.1.242	TCP	62	[TCP Retransmission] 55950 → 445 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 SACK_PERM=1
322	88.361812	10.0.6.149	10.1.1.242	TCP	62	[TCP Retransmission] 55953 → 139 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 SACK_PERM=1

Source: <https://nolongerset.com/troubleshoot-access-hanging/>

Questions?

Links and Resources:

<https://nolongerset.com/troubleshooting-query-performance/>

