BRENT OZAR
UNLIMITED®

ONSITE TRAINING CATALOG

Welcome to the Brent Ozar Unlimited®
Onsite Training Catalog

It's easy to get a thousand prescriptions ... what's hard is coming up with a remedy.

In a Brent Ozar Unlimited® Onsite Training course, you'll learn how to diagnose your toughest pain points and make a plan to bring your databases back to optimal health.

- We teach you to identify and isolate problems—we have ways of making them talk.
- You'll learn techniques to solve each problem, so you'll know what to do after the party's over and everyone's gone home.
- We show you techniques to keep those problems (and others) from rearing their ugly heads in the first place.

So, what do you want to know about?

In this catalog, you'll find training modules for diagnosing, treating, managing, and building SQL Servers. We're talking must-haves, stuff everyone needs to know—"How to Think Like the Engine," for example—all the way down to the specialized topics that will change your life.

Feel free to mix and match. Choose any six hours of content and you'll have a full, eight hour day of onsite training, led by the best EMT (not really an EMT) for your needs. Want multiple days of training? Go for it. We're there.

When all's said and done, you'll have the insight you need to keep your system running strong from here on out. And maybe, just maybe, a new fascination for dinosaurs.

DIAGNOSE

Brent Ozar Unlimited® Onsite Training

DIAGNOSE

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Module Name	Hours	Session Description
How to Think Like the Engine (Strongly Recommended)	1 ☑	When you pass in a query, how does SQL Server build the results? We'll role play: your instructor will be an end user sending in queries, and you'll be the SQL Server engine. Using simple spreadsheets as your tables, you'll learn how SQL Server builds execution plans, uses indexes, performs joins, and considers statistics. This session is for DBAs and developers who are comfortable writing queries, but not so comfortable when it comes to explaining nonclustered indexes, lookups, and sargability. This session sets the stage for most of our other sessions.
Diagnose Bottlenecks with Wait Stats	1 ☐	SQL Server constantly tracks what it's waiting on while it's working on your queries. In this session, we'll show how to get the server's wait stats, how to double-check the bottleneck with Perfmon counters, and how to find the queries that are causing a wait stat.
Diagnose T-SQL Anti-patterns	1 ½ ☐	It's not your fault: there are things that look like they should work, but inside SQL Server, the engine's doing some awkward contortions to pull off your query. You'll learn the most common anti-patterns we see in the field, why they kill performance, and better ways to work around them. We'll cover things like table variables, user-defined functions, and sargability.
Diagnose Storage Bottlenecks	1 ☐	You suspect that storage has been slowing down your SQL Server, but you're not sure how to prove it. In this session, you'll learn how reads and writes work in SQL Server and what can slow them down. You'll also learn what major configuration and application design patterns impact read and write performance in SQL Server. Learn how to know how often your SQL Servers need to make the trip to storage – and to get scripts for diagnosing storage-related latency.
What Queries are Killing My Server?	1 ☐	Learn three easy, free ways to find which queries are using the most CPU, memory, and storage resources on your SQL Server. You'll take these tools and use them in your environment to find queries to tune.
Diagnose CXPACKET Problems	½ ☐	When you query sys.dm_os_wait_stats or use our wait stats sampling query, one of your biggest wait types is probably CXPACKET. We'll teach you what's really going on.
How to Tell if Parameter Sniffing is Slowing Down Your Queries	1 ☐	Could execution plan re-use be slowing down your queries? Learn what "Parameter Sniffing" is and how to identify if it's dragging down your SQL Server.
Identify and Prioritize Your Worst Indexing Problems	1 ☐	Learn how to quickly identify and prioritize anti-patterns like duplicate indexes, missing indexes, unused indexes, and inefficient clustered indexes in SQL Server.
Understanding Execution Plans	2 ☐	Learn how to effectively read SQL Server execution plans, identify problem queries, and use the information in the execution plan to make better tuning decisions.
Building a Health Check Report	1 ☐	A good check up is more than just running a few DMV queries and producing a laundry list of best practices - when one right a health check will give you a list of symptoms, a set of risks and potential mitigations, and a prioritized action plan. In this session, you'll learn the basic tools and techniques that a database administrator needs to get started creating a process to assess server health and start performing regular SQL Server check ups.

TREAT

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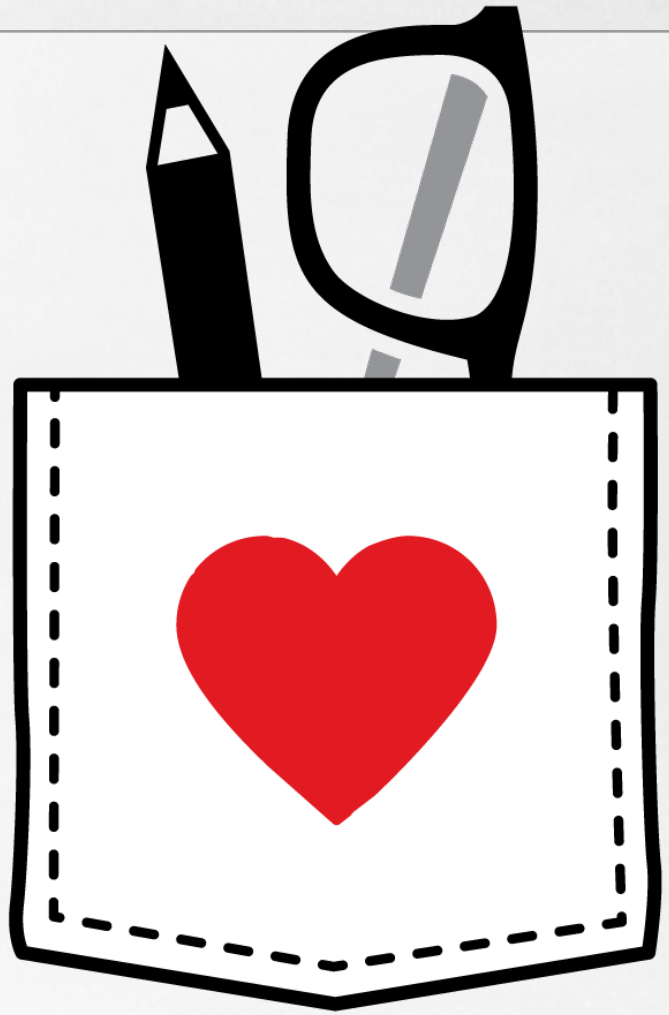
Module Name	Hours	Session Description
Treating Queues in the Database	½ ☐	You're using a relational database to hold a processing queue, and you're not happy with performance - or you ARE happy today, but you're wondering how things will fare down the road. We'll explain short term fixes to alleviate locking problems, mid-term fixes to clean up the table design, and better long-term options.
Watch Us Tune Queries	2 ☐	Once you've found a killer query, and you're armed with the knowledge from the above sessions, how do you tackle the problem query? Watch as we take a single piece of complex T-SQL, measure its IO and CPU impact, then make gradual iterative changes in a specific order to get a fast result.
Index Tuning Challenge	2 ☐	How do your skills at designing indexes for SQL Server measure up? We'll give you a combination of quiz-style questions and index design challenges, then work through the solutions together.
How to Fight Blocking without NOLOCK	1 ☐	Learn why the Read Committed isolation level is more problematic than you think. We'll give you short and long term techniques to fight blocking in SQL Server.
Respond to Outages with the SQL Server First Responder Kit	1 ☐	What do you do when a crisis strikes? Get a toolkit you can use when problems strike, plus insight into how to automatically log schema changes in your SQL Server databases.
How to Design Efficient Clustered Indexes	1 ☐	You know clustered indexes are important, but you're not sure how different choices might impact performance. Learn what's hard to see in the built-in SQL Server tools: the complex relationship between clustered and non-clustered indexes, and how to know when to make a change.
Special Indexes: When to Use Filters, Views, and Computed Columns	1 ☐	Specialized indexes can make queries incredibly fast, but they have hidden pitfalls, too. Learn the strengths and weaknesses of indexed views, filtered indexes, and indexed computed columns.
Treat Rogue Queries with Plan Guides	1 ☐	Plan guides are like duct tape: it's something you want to have on hand for emergency quick fixes, but you don't want to rely on it long term as a building material. Learn when you might want to use plan guides and where you should be especially careful.
Write Effective Dynamic SQL	1 ☐	Dynamic SQL is a misunderstood and much maligned part of a DBA's tool kit – it can be used to solve difficult business problems, respond to diverse data needs, and alleviate performance problems. Many DBAs reject dynamic SQL outright as a potential source of SQL injections, being poorly performing, or just for being a hacky solution in general. Not so! In this session, we'll be dispelling these misconceptions and demonstrating how dynamic SQL can become a part of every DBA's tool kit.



MANAGE

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Module Name	Hours	Session Description
Pick the Right HA/DR Technology	1 ☐	There are so many options for High Availability and Disaster Recovery in SQL Server that it can be overwhelming. Learn about SQL Server's HA and DR options from Log Shipping to database mirroring to SAN Replication to Availability Groups. Discover how to compare and contrast each method and find the right methodology for each database.
Understanding SQL Server Licensing	½ ☐	It's expensive. Really expensive. You want to learn how to do more with less, but you don't want less functionality. We'll talk about your licensing options, edition changes in 2012/2014, and ways to consolidate your database loads. We can cover challenges with virtualization, multi-core processors, and AlwaysOn.
How to Build Smart Maintenance	1 ☐	It's easy to set up maintenance, but difficult to set up the RIGHT maintenance. Find out if you're falling into the trickiest pitfalls of CheckDB, Index Maintenance, and backups.
Monitoring SQL Servers	1 ☐	When you're picking monitoring and performance management software (or thinking about designing your own), you want to know the most common failure scenarios and how the products on the market react. We'll cover the two main types of monitoring software, discuss their strengths and weaknesses, and recommend the right products to evaluate based on your shop's needs.
DBA Job Duties: Developer vs. Production	½ ☐	As your team grows, team members end up specializing in either development or production roles. Learn what each role is expected to do, and what tasks they should start learning.
Leveraging SAN Snapshots with SQL	1 ☐	Learn how SAN snapshots can speed up database maintenance and alleviate bottlenecks in SQL Server.
Managing Very Large Databases	1 ☐	Big databases have big challenges. Learn techniques for index maintenance, CheckDB, and backups for databases 1TB and larger.
Take a SQL Server Inventory	1 ☐	Learn the tools and process to build an inventory and support matrix for your SQL Servers.
Test Your Knowledge on Configuration and Maintenance	1 ☐	How much do you know about configuring SQL Server? Take our pop quiz on everything from Virtual Log Files to architecting storage.
Manage SQL Server Without a DBA	1 ☐	You store data in SQL Server, but you don't have enough work to keep a full-time DBA busy. In just one session, you'll learn the basics of performance troubleshooting, backup, index tuning, and security.


BUILD

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BUILD

Module Name	Hours	Session Description
Building Multi-Tenant Databases	½ ☐	When your application needs to hold data for multiple clients, should you use a single database? Divide them by schemas? Use partitioning? We'll cover the most popular methods, explain their strengths and weaknesses, and help you evaluate the right one for your pain points. We can also introduce you to other clients who've picked the same model as yours, and who have migrated off to other models.
Building Fast SQL Server Hardware	1 ☐	SQL Server speed boils down to how fast we can get data in and out of storage. Sooner or later, we're going to run out of memory to cache. In this session you'll learn how to choose the number of cores and sockets per system and when to use local SSDs instead of a SAN.
Go-Live Checklist	1 ☐	When migrating from one SQL Server to another, you need a plan. This six-week checklist lays out all of the hardware smoke testing, Windows testing, SQL Server testing, and application load testing that we recommend before going live.
Building AlwaysOn Availability Groups	1 ☐	This slick feature promises high availability, disaster recovery, and scale-out - but it comes at a high cost of complexity. We'll talk through 3 real-life success stories from clients, show why they worked, and explain the number of staff involved. You'll learn what it takes to succeed with AlwaysOn AGs.
Configure Quorum for High Availability	1 ☐	"Quorum" is critical to Availability Groups and Failover clusters. Learn how to avoid pitfalls and design quorum to keep your SQL Server databases online.
Building Virtual Machines for SQL Server	1 ☐	Most DBAs size and configure their virtual SQL Servers just like they're physical servers-- but virtual SQL Servers have very unique needs and bottlenecks. Learn why you need to think about memory and processor configuration for virtual SQL Servers differently, and how you can keep your virtual SQL Servers healthy.
Physical Data Modeling	1 ☐	Learn how heaps, foreign keys and check constraints behave differently than you might expect, and when you should use these structures to take advantage of benefits in SQL Server optimization and query execution.
Designing Data, Log, and TempDB Files	1 ☐	How many files does your database need for the best performance? Learn how to use filegroups and database settings to speed up queries, reduce logging and improve recovery performance.
Reporting in Production	1 ☐	Everyone wants reports but nobody wants to build out a separate reporting server. What options do you have short of throwing up your hands in defeat? Learn four SQL Server technologies that help with reporting in production.